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7. Abstract

The WRAP 1 DMS SDD describes the logical and physical architecture of the system specified in WHC-SD-W026-CSRS-001, *WRAP 1 DMS Software Requirements Specification (SRS)*, Rev. 0 (WHC 1994). The *WRAP 1 DMS SDD* formally partitions the elements of the system described in the *WRAP 1 DMS SRS* into design objects and describes the key properties and relationships among the design objects and interfaces with external systems such as the WRAP Plant Control System (PCS). The WRAP 1 DMS system is being developed to assist the Project W-026, Waste Receiving and Processing Module 1, in their management functions. The WRAP 1 DMS is required to collect, store, and report data related to certification, tracking, packaging, repackaging, processing, and shipment of waste processed or stored at the WRAP 1 facility. The *WRAP 1 DMS SDD* is used as the primary medium for communicating software design information.

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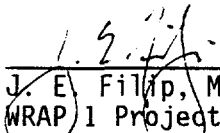
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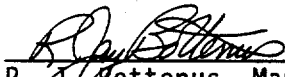

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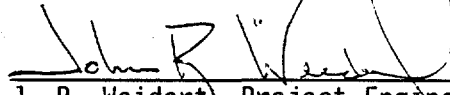

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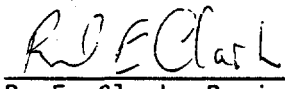
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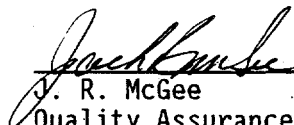

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Revision 0 of the Waste Receiving and Processing (WRAP) Module 1 Data Management System (DMS) Software Design Description (SDD) provides a high-level design description of the system. Detailed design descriptions have been provided only for the following process modules:

- Receiving Drum or Box Containers
- Process Routing and Picklists
- Waste Inventory by Location and/or Container Relationships
- LLW Process Glovebox
- Facility Radiologic Material Inventory Check
- Fissile Material Inventory.

The release of this document at this time allows construction of the listed modules to progress while design work is completed for the next scheduled group of modules. Detailed design descriptions will be included in Revision 1 of this document for the following process modules:

- Shipping
- Drum or Box NDE Operations
- Drum or Box NDA Operations
- NDA Verification Containers
- Sample Management
- LLW RWM Glovebox.

Modules and functions supporting TRU waste processing will not be addressed in greater detail until Fiscal Year 1996.

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CONTENTS

GLOSSARY	xi
1.0 INTRODUCTION	1-1
1.1 PURPOSE	1-1
1.2 SCOPE	1-1
1.3 OVERVIEW	1-2
2.0 DECOMPOSITION DESCRIPTION	2-1
2.1 MODULE DECOMPOSITION	2-1
2.1.1 Process Modules	2-1
2.1.1.1 Receiving	2-1
2.1.1.2 NDE/NDA Operations	2-1
2.1.1.3 Process Operations	2-3
2.1.1.4 Sample Management	2-3
2.1.1.5 Shipping	2-3
2.1.1.6 Process Routing and Pick Lists	2-3
2.1.2 System Modules	2-3
2.1.2.1 Waste Inventory by Location and/or Container Relationships	2-3
2.1.2.2 User Review/Modification of WRAP 1 Processing Data	2-4
2.1.2.3 Reports	2-4
2.1.2.4 Table Maintenance	2-4
2.1.2.5 Error Detection and Recovery	2-4
2.1.2.6 Interfaces	2-4
2.1.2.7 Performance, Attributes, and Requirements	2-4
2.2 CONCURRENT PROCESS DECOMPOSITION	2-4
2.3 DATA OBJECT DECOMPOSITION	2-5
3.0 OBJECT-ORIENTED DESIGN DESCRIPTION	3-1
3.1 INTERMODULE AND INTERPROCESS DEPENDENCIES	3-1
3.1.1 Work Flow Description	3-1
3.1.2 Data Sources	3-1
3.1.3 WRAP 1 DMS System Administration Context Diagram	3-3
3.2 OBJECT MODEL DIAGRAMS	3-5
3.2.1 Data Dictionary	3-5
3.2.2 Relationship Model	3-5
3.2.3 Process Model	3-5
3.3 DATA DEPENDENCIES	3-7
3.3.1 Object Dependency Descriptions	3-7
3.3.1.1 Functional Database Objects	3-7
3.3.1.2 Systems Management Objects	3-9
3.3.2 Object Relationship Descriptions	3-10
3.3.2.1 Functional Database Relationships	3-11
3.3.2.2 Certification Data Set Relationships	3-14
3.3.2.3 NDE Characterization Data Set Relationships	3-15
3.3.2.4 NDA Characterization Data Set Relationships	3-15

3.3.2.5	Functional Relationships Between Database Objects and Exterior Entities	3-15
3.3.2.6	Systems Management Relationships	3-16
3.4	PHYSICAL DATA MODEL	3-16
3.4.1	Data Dictionary	3-16
3.4.2	Indexes	3-16
3.4.2.1	Unique Indexes.	3-17
3.4.2.2	Foreign Indexes.	3-17
3.5	NETWORK DEPENDENCIES	3-17
3.6	CONVERSION DEPENDENCIES	3-17
4.0	INTERFACE DESCRIPTION	4-1
4.1	INTERNAL INTERFACES	4-1
4.2	EXTERNAL INTERFACES	4-1
4.2.1	Software Interfaces	4-1
4.2.2	Communications Interfaces	4-1
4.2.3	Hardware Interfaces	4-2
4.3	MAN/MACHINE INTERFACES	4-2
4.3.1	WRAP 1 DMS Security	4-2
4.3.2	User Interfaces	4-7
4.3.3	Developer Interface	4-7
4.3.3.1	Data/Database Administration.	4-7
4.3.3.2	Developers.	4-7
5.0	DETAILED DESIGN	5-1
5.1	GENERAL DESIGN SPECIFICATIONS	5-1
5.1.1	Screens	5-2
5.1.2	Error and Message Handling	5-2
5.1.3	System Security	5-2
5.1.4	System Administration	5-2
5.2	SYSTEM NAVIGATION	5-2
5.2.1	WRAP 1 DMS System Screen - WRAP 1 DMS User Menu	5-3
5.2.2	Receiving Screens	5-3
5.2.2.1	Container Receiving (DMSS0101)	5-3
5.2.2.2	Bar Code Package ID Labels (DMSS0102)	5-5
5.2.3	NDE/NDA Operations Screens	5-5
5.2.3.1	NDE (DMSS0201)	5-5
5.2.3.2	NDA (DMSS0202)	5-5
5.2.4	Process Operations Screens	5-5
5.2.4.1	Glovebox Operations Menu	5-5
5.2.4.2	LLW Process Glovebox Menu (DMSS0301)	5-5
5.2.4.3	LLW Glovebox Drum Status at Entry (DMSS0311)	5-6
5.2.4.4	LLW Sorting Table (DMSS0312)	5-6
5.2.4.5	LLW Non-Compliant Packet (DMSS0313)	5-6
5.2.4.6	LLW Sample Data (DMSS0314)	5-6
5.2.4.7	LLW Physical Composition Pop-Up	5-6
5.2.4.8	LLW Chemical Composition Pop-Up	5-6
5.2.4.9	LLW Exit Glovebox (DMSS0315)	5-6
5.2.4.10	LLW RWM Process Glovebox Menu	5-7
5.2.4.11	LLW RWM Compliant Waste Loadout (DMSS0321)	5-7
5.2.4.12	LLW RWM Aerosol Can Puncture and Collection (DMSS0322)	5-7
5.2.4.13	LLW RWM Non-Compliant Item Screening (DMSS0323)	5-7
5.2.4.14	LLW RWM Treatment (DMSS0324)	5-8

5.2.4.15	LLW RWM Processing Instructions (DMSS0325)	5-8
5.2.4.16	LLW RWM Treated Waste Loadout (DMSS0326)	5-8
5.2.4.17	TRU Process Glovebox Menu	5-8
5.2.4.18	TRU Sorting Glovebox	5-8
5.2.4.19	TRU Non-compliant Packet	5-9
5.2.4.20	TRU Empty Drum Compactor	5-9
5.2.4.21	TRU RWM Process Glovebox Menu	5-9
5.2.4.22	TRU RWM Compliant Waste Load Out	5-9
5.2.4.23	TRU RWM Aerosol Can Puncture and Collection	5-9
5.2.4.24	TRU RWM Non-compliant Item Screening	5-9
5.2.4.25	TRU RWM Treatment	5-10
5.2.4.26	TRU RWM Processing Instructions	5-10
5.2.4.27	TRU RWM Treated Waste Load Out	5-10
5.2.5	Data Validation Table Maintenance Screens	5-10
5.2.5.1	Isotope Table (DMSS0400)	5-10
5.2.5.2	Primary Waste Type Table (DMSS0401)	5-11
5.2.5.3	Secondary Waste Type Code Table (DMSS0402)	5-11
5.2.5.4	Company Table (DMSS0403)	5-11
5.2.5.5	Facility Table (DMSS0405)	5-11
5.2.5.6	Physical Component Description Table (DMSS0407)	5-11
5.2.5.7	Storage Category Table (DMSS0408)	5-11
5.2.5.8	Miscellaneous Code Table (DMSS0409)	5-11
5.2.5.9	Container Size Table (DMSS0411)	5-11
5.2.5.10	TSD Facility Table (DMSS0413)	5-11
5.2.5.11	Laboratory Table (DMSS0414)	5-11
5.2.5.12	Person Table (SWIU415)	5-11
5.2.5.13	DOT Container Specification Table (DMSS0418)	5-11
5.2.5.14	Dangerous Waste Number Table (DMSS0419)	5-11
5.2.5.15	Hazardous Chemical Component Table (DMSS0420)	5-12
5.2.5.16	Facility Curie Limit Table (DMSS0421)	5-12
5.2.5.17	Material Safety Data Sheet Table (DMSS0422)	5-12
5.2.5.18	Package Status Table (DMSS0423)	5-12
5.2.5.19	Calibration Container Table (DMSS0450)	5-12
5.2.5.20	Container Location Matrix (DMSS0451)	5-12
5.2.5.21	Location Table (DMSS0452)	5-12
5.2.5.22	General Assay Profile Table (DMSS0453)	5-12
5.2.5.23	Profile Isotope Table (DMSS0454)	5-12
5.2.5.24	Route Description Table (DMSS0455)	5-12
5.2.5.25	Shipment Picklist Description Table (DMSS0456)	5-12
5.2.5.26	SIE Isotopic Name Table (DMSS0457)	5-12
5.2.5.27	TRU Container Code Table (DMSS0458)	5-12
5.2.5.28	Container Use Code Table (DMSS0459)	5-12
5.2.5.29	Verification Criteria Limit Table (DMSS0460)	5-12
5.2.5.30	WRAP Miscellaneous Table (DMSS0461)	5-12
5.2.5.31	Treatment Profile Table (DMSS0462)	5-12
5.2.6	Sample Management Screens	5-13
5.2.6.1	Sample Management Menu	5-13
5.2.6.2	Sample Data (DMSS0501)	5-13
5.2.6.3	Electronic Chain of Custody (DMSS0502)	5-13
5.2.6.4	Chain of Custody (DMSS0503)	5-13

5.2.6.5	Sample Analysis Request (DMSS0504)	5-13
5.2.6.6	Waste Designation (DMSS0505)	5-13
5.2.6.7	Treatment Process Entry (DMSS0506)	5-14
5.2.7	Shipping Screens	5-14
5.2.7.1	Shipping Menu	5-14
5.2.7.2	Loading Dock Shipping Data (DMSS0601)	5-14
5.2.7.3	Loading Dock Container Shipping (DMSS0602)	5-14
5.2.7.4	TRUPACT Payload Assembly	5-15
5.2.7.5	TRUPACT Cask Loading	5-15
5.2.7.6	TRU Waste Shipping (DMSS0605)	5-15
5.2.8	System Administration Tables	5-15
5.2.8.1	Error Message Table (DMSS0701)	5-16
5.2.8.2	User Table (DMSS0702)	5-16
5.2.8.3	Security Table	5-16
5.2.8.4	System Bulletin (DMSS0705)	5-16
5.2.8.5	Report Table	5-16
5.2.8.6	Role Table	5-16
5.2.8.7	User Role Table (DMSS0708)	5-16
5.2.8.8	Procedure Access Table (DMSS0709)	5-16
5.2.8.9	Field Help Table (DMSS0710)	5-16
5.2.8.10	Form Help Table (DMSS0711)	5-16
5.2.8.11	New User Setup (DMSS0712)	5-16
5.2.9	Report Screens	5-16
5.2.9.1	Reports Menu	5-16
5.2.9.2	Data Selection Screens	5-16
5.2.10	Process Routing and Pick Lists Screens	5-17
5.2.10.1	Pick List Menu	5-17
5.2.10.2	Download Processing List (DMSS0901)	5-17
5.2.10.3	Process Pick List (DMSS0902)	5-17
5.2.10.4	AS/RS Storage Pick List (DMSS0903)	5-17
5.2.10.5	AS/RS Shipping Pick List Screen (DMSS0904)	5-18
5.2.10.6	TRUPACT Assembly Pick List	5-18
5.2.11	Process Route Designation Screen (DMSS1001)	5-18
5.2.12	Facility Metrics and Inventories Screens	5-18
5.2.12.1	Facility Metrics and Waste Inventory (DMSS1101)	5-18
5.2.12.2	Radiologic Inventory Summary (DMSS1102)	5-18
5.2.13	Process Data Review Screen (DMSS1201)	5-18
5.3	REPORTS	5-19
5.3.1	Receiving Reports	5-19
5.3.1.1	Bar Code Package ID Labels (DMSR0120)	5-19
5.3.2	NDE/NDA Reports	5-19
5.3.2.1	Assay Profile Report (DMSR0220)	5-19
5.3.3	Process Operations (Glovebox) Reports	5-19
5.3.3.1	Transfer Drum Status Report (DMSR0321)	5-19
5.3.3.2	Aerosol Can Process Report (DMSR0322)	5-19
5.3.3.3	Treatment Report (DMSR0324)	5-19
5.3.4	Data Validation Table Maintenance Reports	5-19
5.3.5	Sample Management Reports	5-21
5.3.5.1	Chain of Custody Report (DMSR0530)	5-21
5.3.5.2	Open Sample Status Detail Report (DMSR0531)	5-21
5.3.5.3	Sample Status Detail Report for Package ID (DMSR0532)	5-21
5.3.6	Shipping Reports	5-21

5.3.6.1	Solid Waste Storage/Disposal Record (SWSDR) (DMSR0610)	5-21
5.3.6.2	Uniform Hazardous Waste Manifest (DMSR0620)	5-21
5.3.6.3	Labpack Description Report (DMSR0621)	5-22
5.3.6.4	WRAP Module 1 Shipping Report (DMSR0622)	5-22
5.3.6.5	Transuranic Waste Disposal Record	5-22
5.3.7	Picklist Reports	5-22
5.3.7.1	Picklist Summary Report (DMSR0920)	5-22
5.3.8	Facility Metrics and Inventories Reports	5-22
5.3.8.1	WRAP Module 1 Processing Report (DMSR1110)	5-22
5.3.8.2	WRAP Module 1 Location History Report (DMSR1111)	5-22
5.3.8.3	Container Relationship Report (DMSR1112)	5-22
5.3.8.4	Building Inventory Report (DMSR1113)	5-23
5.3.8.5	Open Container Status - Hazardous (DMSR1114)	5-23
5.3.8.6	Waste Awaiting Shipment Report (DMSR1115)	5-23
5.3.8.7	Empty Container Inventory Report (DMSR1116)	5-23
5.3.8.8	Curie and Fissile Material Inventory Report (DMSR1120)	5-23
5.3.8.9	TRU and TRU RWM Glovebox Fissile Inventory History Report (DMSR1121)	5-23
5.3.9	Process Data Review Reports	5-23
5.3.9.1	WRAP Module 1 Verification Report (DMSR1210)	5-23
5.3.9.2	Container Listing Report for Package ID (DMSR1211)	5-23
5.3.9.3	Alert Flag Status Report for Package ID (DMSR1212)	5-23
5.3.9.4	LabPack Detail Report (DMSR1213)	5-24
5.3.10	TRUPACT Reports	5-24
5.3.10.1	TRUPACT Box Assembly Report	5-24
5.3.10.2	TRUPACT Loading Report	5-24
5.3.10.3	TRUPACT II Payload Assembly Report	5-24
5.4	DATA DETAIL DESIGN	5-24
6.0	REFERENCES	6-1
6.1	Trademarks	6-1

TABLES

3-1.	WRAP 1 DMS Process Model Data.	3-7
4-1.	DMS Screen/Data Access Table.	4-4
4-2.	Workstation Access by DMS Category.	4-5

FIGURES

2-1.	WRAP 1 DMS Module Decomposition.	2-2
3-1.	WRAP 1 Process Flow.	3-2
3-2.	Wrap 1 DMS System Administration Context Diagram.	3-4
3-3.	Relationship Model Guide.	3-6
3-4.	Data Management System Communications Interface.	3-18
3-5.	Data Management System Context Diagram.	3-19
5-1.	WRAP 1 DMS Screens Interface Diagram.	5-4
5-2.	WRAP 1 DMS Reports Interface Diagram.	5-20

APPENDICES

- A. Screen Design Details
- B. Report Design Details
- C. Data Dictionary
- D. Relationship Model
- E. DMS Communications Design Details
- F. Process Model

GLOSSARY

The definitions and terminology used in this document are documented in ANSI/IEEE 729-1983, *Standard Glossary of Software Engineering Technology* (ANSI/IEEE 1989). Definitions which may be of special interest to the reader, deviations, and additions are defined in this section. Acronyms and initialisms are also defined.

ACRONYMS AND INITIALISMS

ANSI	American National Standards Institute
AS/RS	Automatic Stacker/Retriever System
BWAS	Boxed Waste Assay System
Ci	Curies
CMP	Container Management Program
DBA	Database Administrator
DBMS	database management system
DMS	Data Management System
DW	dangerous waste
EPA	United States Environmental Protection Agency
FGE	Pu-239 Fissile Gram Equivalent
FIPS	Federal Information Processing Standard
GEA	gamma energy assay
GUI	graphical user interface
HCC	hazardous chemical component
HLAN	Hanford Local Area Network
IEEE	Institute of Electrical and Electronics Engineers
LAN	local area network
LLW	low-level waste
LLWSDR	Low-Level Waste Storage Disposal Record
MSDS	Material Safety Data Sheet
NDA	non-destructive assay
NDE	non-destructive examination
OOM	Object-Oriented Methodology
PAM	Packet Assay Monitor
PAN	Passive Active Neutron
PC	personal computer
PCB	polychlorinated biphenyl
PCS	Plant Control System
PIN	Package Identification Number
PIR	Performance Indicator Report
QA	Quality Assurance
RDBMS	relational database management system
RSR	radioactive shipment record
RWM	restricted waste management
SA	System Administrator
SDD	Software Design Description
SIE	System Integration Equipment
SII	Systems Interface, Inc.

SPMP	Software Project Management Plan
SQL	Structured Query Language
SRS	Software Requirements Specification
SWITS	Solid Waste Information and Tracking System
TRU	Transuranic
TSD	treatment, storage, and disposal (facility)
TWSR	Transuranic Waste Storage Record
UHWM	Uniform Hazardous Waste Manifest
WHC	Westinghouse Hanford Company
WIPP	Waste Isolation Pilot Plant (Carlsbad, NM)
WLAN	WRAP Local Area Network
WRAP	Waste Receiving and Processing

DEFINITIONS

Application. The data manipulation and processing operations that are related to specific requirements of an information system.
Software or program that is specific to the solution of a specific business problem or process.

Application System. A collection of applications that uses the services provided by the human-computer interface, communications facility, and data management system to perform the processing necessary to meet the requirements of the information system.

Architecture. The manner in which hardware, software, or data are structured. Architecture typically describes how the system or program is constructed, how its components fit together, and the protocols and interfaces used for communication and cooperation among modules or components of the system.

Archive. To save data for possible later use.

Attribute. Any detail that serves to qualify, identify, classify, quantify, or express the state of an entity. Or, any description of a 'thing of significance'. Attributes are extracted into database elements.

Audit Trail. The capability to report manual data entry and database changes at the data field level. The audit trail provides a record of the date, time, previous value (for data changes), current value, and the identity of the person entering the data (identified through the signature password).

Background Drums (also referred to as "white" drums). Drums containing an uncontaminated waste matrix. Drums are assayed at the start of each operating shift.

Cardinality. Describes the number of instances between two objects.

Certification. The process of certifying that waste is compliant with the regulatory requirements for shipment and/or disposal of the waste.

Certification data. Waste data used to certify that the waste is compliant with the regulatory requirements for shipment and/or disposal of the waste.

Certification drums. (1) Drums generated in the WRAP 1 Process Area. The assay data generated in WRAP for these drums will be the certification data that is used to support disposal of the waste in a final repository. Radionuclide abundance data will not be available for verification by the SIE (except for LLW pucks). (2) Drums comprised of newly-generated wastes which have been shipped to WRAP for verification of the waste certification data provided by the waste generator. These drums do not go into the Process Area. Radionuclide abundance data will be available and will be verified by the SIE.

Characterization/Default data. Data is expressed as a decimal fraction representing the Ci of activity attributed to a given isotope divided by the Ci of activity attributed to the entire waste package. Also referred to as **Relative abundance data**.

Example: Pu-239 0.22

Collection Container. A container used in the restricted waste management (RWM) gloveboxes to collect liquids from aerosol cans for sampling and storage prior to treatment. Collection containers are stored in transfer drums.

Commit. The process of storing new, changed, or deleted records from the work space to a table in the database.

Computer System. A collection of hardware that is managed as a single unit by software such as an operating system, which may also provide common services such as access control, interprocess communications, and a graphical user interface.

Context Diagram. A drawing that shows the boundaries of a system and the interfaces associated with the system.

Data Dictionary. (1) A description of the characteristics of data. The system tables that contain descriptions of the database objects and how they are structured. (2) An inventory that describes, defines, and lists all the data elements that are stored in a database.

Data Element. The logical definition of a unit of information, apart from its actual use (that is, physical rendering) within any given program, file, database report, screen, and so on; the smallest unit of physical data about which attributes are defined; the lowest level of addressable data in which data value(s) are physically stored.

Data Flow. A representation of the passage of data or relationships among business processes, data stores, data flows, and external entities.

- Data Flow Diagram.** A graphical representation, following a certain style, of business processes, data stores, data flows, and external entities.
- Data Integrity.** The ability to preserve the completeness, currency, and accuracy of the data without unintentional changes; the ability to produce results that are correct to a predefined level and to maintain data availability; conformance of data values to a specified set of rules.
- Data Standards.** The definition of how facts are to be referred to, how they are to be represented, what they will mean, and the rules governing their informational use throughout the enterprise.
- Database.** (1) A collection of data logically organized to meet the information and time requirements of a universe of users. (2) A collection of interrelated, largely unique data items or records, in one or more computer files, that may be processed by many different application programs.
- Database Management System (DBMS).** A computerized system consisting of numerous components which have as their collective purpose the implementation, processing, management, and protection of databases.
- Design.** The process of defining the software architecture, components, modules, interfaces, test approach, and data from a software system to satisfy requirements.
- Domain.** The range of values, format constraints, and other properties that apply to an attribute.
- Drums for processing.** Drums containing a contaminated waste matrix. Drums are destined for processing in the WRAP 1 facility and require an assay to support the processing of the waste. Waste drums are generally "retrieved" from the burial grounds, however, approximately 10% of these drums will be newly-generated waste which is processed to remove non-compliant items.
- Entity.** Any external system which may communicate with the WRAP 1 DMS system.
- Field.** In a table, the information stored at the intersection of a row and a column. In a block, a highlighted or underlined area on the screen that can display an output value or accept an input value.
- File.** (1) A collection of related data that is stored and retrieved by an assigned name. Synonymous with data set. (2) A collection of rows (or records) that have associated columns (or files). The logical equivalent of a table. (3) A named set of records stored or processed as a unit.
- Foreign key.** One or more columns in a table that implement a many to one relationship that the table in question has with another table. This concept allows the two tables to be joined together.

Hardware. All or part of the physical components of an information system or computer environment.

Isotopic Quantity Data. A data value that defines the actual mass of an isotope present in an item. Units are grams for TRU isotopes and Curies for all other isotopes.

Local Area Network (LAN). A local area network connects information processing equipment, such as PCs and printers, in a limited geographical area to allow high-speed communications for information resource sharing.

Module. (1) A program unit that is discrete and identifiable with respect to compiling, combining with other units and loading. (ANSI); (2) A logically separable part of a program.

Network. A computer communications system linking a series of computer elements. A system of interconnected computing devices that can communicate and share resources. Networks may be private (for one user) or shared (for many users).

Object. A physical thing or component that best represents process boundaries. Design objects are abstractions which, in the final stage of design, evolve into database structures.

Object-Oriented Methodology. A disciplined approach to the development of software which involves the conscious and deliberate use of the notion of an object as an organizing criteria for the data abstractions and the procedures which act on those abstractions.

One Trip Drum. A 55-gallon drum used for TRU loadout.

Oracle. A commercial relational database management software package. It includes software for data entry, database queries, and reports from the database.

Overpack Drum. An 85-gallon drum containing a 55-gallon waste drum. An 85-gallon drum used to contain waste or pucks is not an overpack drum, but an 85-gallon waste drum.

Packet. A package containing non-compliant or suspected non-compliant waste which has been removed from a waste drum in a process glovebox. Each packet is labeled and placed in a transfer drum for transfer to an RWM glovebox.

Pallet. A platform used to hold up to four drums during transport and storage in the Automatic Stacker/Retriever System (AS/RS). Pallets are not uniquely identified.

Pig. A labeled shielded container used to transport purge ports and samples.

Pop-Up. Screen area that overlays all or a portion of the display screen. Pop-ups have unique functionality, but all pop-ups

display information to the user while maintaining context in the session.

Primary Key. The set of mandatory columns within a table that is used to enforce uniqueness of rows, and that is normally the most frequent means by which rows are accessed.

Process. (1) A predetermined course of events defined by its purpose or by its effect, achieved under given conditions. (2) An active component of an information system.

Puck. A supercompacted drum containing low level waste. All pucks are low level waste and are placed in 85 gallon drums for storage and/or disposal.

Purge Port. A container used to remove and transport samples from gloveboxes. The purge port acts as an air-lock and provides contamination control.

Relational database. (1) A database that is organized and accessed according to relationships between data items. (2) A data structure perceived by its users as a collection of tables. A relational database consists of tables, rows, and columns. Most mini-computers and mainframes today have relational database systems available for business use. Relational databases differ from non-relational databases in that there are no system dependencies stored within the data; for example, hierarchical databases are not relational because they contain pointers to other data. Oracle is a relational database management system (RDBMS).

Revisit Drum. Drum that has been assayed in WRAP prior to receipt of characterization data. The drum may be shipped from the WRAP facility, but the assay data is retained in the SIE until such time as the characterization data becomes available. The original assay is then revisited and the final assay results generated.

Sample. A labeled package of material to be transported to the laboratory for analysis. Samples may be random confirmatory samples from the process gloveboxes or restricted waste samples from the RWM gloveboxes. Samples may be returned from the laboratory when analysis is complete. Returned restricted waste samples are treated with the corresponding parent item.

Set. A group of like objects.

Software. (1) A compilable piece of code. (2) All or part of the programs, procedures, rules, and associated documentation of an information system.

Software Design Description (SDD). A representation of a software system created to facilitate analysis, planning, implementation, and decision making. A blueprint or model of the software system. The SDD is used as the primary medium for communication of software design information. SQL is defined in Federal

Information Processing Standard (FIPS) publication 127-1, *Database Language SQL*.

Structured Query Language (SQL). A standardized language for requesting data from a database.

Table. A tabular view of data, which may be used on a relational database management system to hold one or more columns to data. It is often an implementation of an object.

Transaction Log. In conjunction with the system backup capability, can be used to facilitate reconstruction of the database if the disk is damaged. The system records the transaction log of a disk other than the one this database is on.

Transfer Drum. A 55 gallon Drath & Schrader drum used to move and store packets, parent items, and collection containers.

Treatment Container. A container used in the RWM gloveboxes to collect parent items and samples for treatment.

TRUPACT Assembly. A seven drum or single box assembly forming the upper or lower portion of a TRUPACT cask load.

TRUPACT Cask. The shipping container used to transport TRU waste to the Waste Isolation Pilot Plant (WIPP). A TRUPACT cask can be used to transport 14 drums or two boxes.

Unique Key. Any combination of attributes and/or relationships that serves, in all cases, to uniquely identify an occurrence of an object.

Verification. Comparing newly generated waste characterization data with existing certification data to insure the values are within a specified tolerance.

Verification data. Data collected to verify existing certification data.

Verification drums (also referred to as "pink" drums or "QC" drums). Drums containing a waste matrix with known levels of radionuclide quantities. Drums are assayed at the start and the end of each operating shift. There are two different Verification drums: a high standard and a low standard.

Waste Drum. A labeled 55-gallon or 85-gallon drum containing waste.

X Windows. X Windows is a bit mapped user display. It uses the client-server model, where the client is the windowed application and the server is the window system. The client-server model allows the user almost complete machine independence. Although X Windows is currently a de facto standard, the National Institute of Standards and Technology plans to adopt the X Windows System as a Federal Information Processing Standard (FIPS).

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WRAP MODULE 1 DATA MANAGEMENT SYSTEM
SOFTWARE DESIGN DESCRIPTION

1.0 INTRODUCTION

The *Waste Receiving and Processing (WRAP) Module 1 Data Management System (DMS) System Design Description (SDD)* describes the logical and physical architecture of the system specified in WHC-SD-W026-CSRS-001, *WRAP 1 DMS Software Requirements Specification (SRS)*, Rev. 0 (WHC 1994).

The *WRAP 1 DMS SDD* formally partitions the elements of the system described in the *WRAP 1 DMS SRS* into design objects and describes the key properties and relationships among the design objects and interfaces with external systems such as the WRAP Plant Control System (PCS). The *WRAP 1 DMS SDD* can be thought of as a detailed blueprint for implementation activities.

The *WRAP 1 DMS SDD* is formally reviewed in compliance with the Quality Assurance (QA) program WHC-CM-4-2, *Quality Assurance*, (WHC 1989) QI 3.2. This document will be reviewed against the *WRAP 1 DMS SRS* and revised as necessary to reflect changes in the WRAP 1 DMS requirements.

The organization and contents of this document are in compliance with WHC-CM-3-10, *Software Practices* (WHC 1993) and follow the guidance in American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE) Standards 1016-1987, *Software Design Descriptions* (ANSI/IEEE 1989).

1.1 PURPOSE

Each function in the *WRAP 1 DMS SRS* has been partitioned into design objects which can be traced to design solutions in the *WRAP 1 DMS SDD*. The design solutions identified are judged best able to meet *WRAP 1 DMS SRS* objectives within the constraints identified in Section 1.2 below. The purpose of this document is to describe the content and relationships of the design objects to which *WRAP 1 DMS SRS* system functions have been allocated. The *WRAP 1 DMS SDD* is used as the primary medium for communicating software design information.

This document is a sustainable deliverable and shall be maintained by revision for the life of the Waste Receiving and Processing Module 1 (WRAP 1) Data Management System (DMS), including the phase of system operation and maintenance following project completion. Applicability of the *WRAP 1 DMS SDD* shall begin immediately when released for issue.

1.2 SCOPE

The design descriptions contained within this document will describe, in detail, the software products that will be developed to assist the Project W-026, Waste Receiving and Processing Module 1, in their management functions. The WRAP 1 DMS is required to collect, store, and report data related to

certification, tracking, packaging, repackaging, processing, and shipment of waste processed or stored at the WRAP 1 facility. The software products to be produced are: 1) the WRAP 1 DMS applications software; 2) communications software between the DMS and other WRAP 1 facility systems; and 3) Solid Waste Information and Tracking System (SWITS) interface software. Appendix H provides a description of the necessary changes to the SWITS system to support the WRAP 1 DMS.

The scope of this document is limited to a description of the software design for the WRAP 1 DMS, and this document is used as the primary medium for communicating software design information. Host hardware and operating software, terminal devices, communications hardware and software, and host software products will be provided for systems developers.

The WRAP 1 DMS project development efforts progress in accordance with the latest approved version of WHC-SD-W026-SDP-001, *Waste Receiving and Processing Facility Module 1 Data Management System Software Project Management Plan (SPMP)* (WHC 1994).

1.3 OVERVIEW

The general structure of this document supports the concept of multiple design views by organizing information about design objects and their associated attributes and behaviors into separate design views. Each design view represents a separate concern about the software system. Both logical and physical representations of the design are presented in the *WRAP 1 DMS SDD*. The *WRAP 1 DMS SDD* is organized into six chapters.

Chapter 1.0 provides an introduction to the document.

Chapter 2.0 describes the division of the software system into design objects. This chapter describes how the system has been structured and the purpose and function of each object.

Chapter 3.0 describes the relationships and behavior among the design objects. This chapter defines the interaction among design objects and provides the information needed to easily perceive why, how, where and at what level system actions occur.

Chapter 4.0 describes internal and external system interfaces. The human-machine interface is addressed in this chapter.

Chapter 5.0 describes the internal details and attributes of the design objects. This chapter provides the developers with specific programming instructions.

Chapter 6.0 provides references to related project documentation.

The appendices contain additional supporting information including Screen Details (Appendix A), Report Details (Appendix B), Data Dictionary (Appendix C), Relationship Models (Appendix D), and Process Models (Appendix F). The information in the appendices will be revised as appropriate as the software design phase is completed and development initiated.

The Object-Oriented Methodology (OOM) used in the WRAP 1 DMS design does not adapt to the concept of breaking down the design into the Preliminary and Detail SDDs advocated by WHC-CM-3-10, *Software Practices*. In each step of the OOM the prior models will change, resulting in requiring updates to the models during each step and failing to provide a clear break between preliminary and detailed design phases. However, this iterative method provides the developers with a comprehensive understanding of the system requirements, the discovery of new or mis-stated requirements, issue resolution prior to implementation, and a chance to thoroughly develop and test requirements prior to implementation.

Because of this inequity, several Draft versions of the SDD will be issued throughout the development cycle. In this release, Rev. 0, detailed design descriptions have been provided only for the following process modules:

- Receiving Drum or Box Containers
- Process Routing and Picklists
- Waste Inventory by Location and/or Container Relationships
- LLW Process Glovebox
- Facility Radiologic Material Inventory Check
- Fissile Material Inventory.

The release of this document at this time allows construction of the listed modules to progress while design work is completed for the next scheduled group of modules. Detailed design descriptions will be included in Revision 1 of this document for the following process modules:

- Shipping
- Drum or Box NDE Operations
- Drum or Box NDA Operations
- NDA Verification Containers
- Sample Management
- LLW RWM Glovebox.

Modules and functions supporting TRU waste processing will not be addressed in greater detail until Fiscal Year 1996.

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2.0 DECOMPOSITION DESCRIPTION

The WRAP 1 DMS is composed of several system and process modules. This chapter describes the purpose and function of each module. The purpose of this chapter is to provide a high level understanding of the system, which will provide the primary data collection, tracking, presentation, and storage capability for waste stored at the WRAP 1 facility.

2.1 MODULE DECOMPOSITION

Design modules result from decomposition of system requirements. The objective of functional decomposition is to divide the system into separate modules that can be implemented, changed, maintained, and tested with minimal effect on the other design modules. The WRAP 1 DMS functional areas have been separated into individual design modules which are structurally and functionally distinct.

The WRAP 1 DMS functional areas include both process modules and system modules. Each module contains one or more of the following data processing elements: Updates, Displays, and/or Reports. These elements will be described in greater detail in Chapter 5.0.

2.1.1 Process Modules

The WRAP 1 DMS process modules encompass the tracking and maintaining of regulated solid waste information as specified in the *WRAP 1 DMS SRS* and associated deliverables. Process modules encompass the following functions: Receiving; Non-destructive Examination/Non-destructive Assay (NDE/NDA) Operations; Process Operations; Sample Management; Shipping; and Process Routing and Pick Lists. Each function is comprised of one or more independent modules (see Figure 2-1).

2.1.1.1 Receiving. Receiving is the processing of waste drums, waste boxes, and empty drums into the WRAP 1 facility at the receiving dock. This process ensures that the container labels are all intact, the location/relocation history on SWITS is confirmed and associated data is downloaded, the waste container is on a process pick list, the waste container has been assigned a routing code, and the curie inventory for the facility is updated with each waste container's curie loading. The module that encompasses Receiving is Receiving Drum or Box Containers.

2.1.1.2 NDE/NDA Operations. NDE/NDA Operations provides operational data and data collection functions for the non-destructive examination/non-destructive assay (NDE/NDA) operations. NDE/NDA operations are conducted in two different areas. Boxes are evaluated in the Box NDE system and the Boxed Waste Assay System (BWAS). Drums are routed through the drum NDE/NDA area, which is further segmented into Drum NDE, Passive Active Neutron (PAN) and Gamma Energy Assay (GEA) operations. The modules that encompass NDE/NDA Operations are:

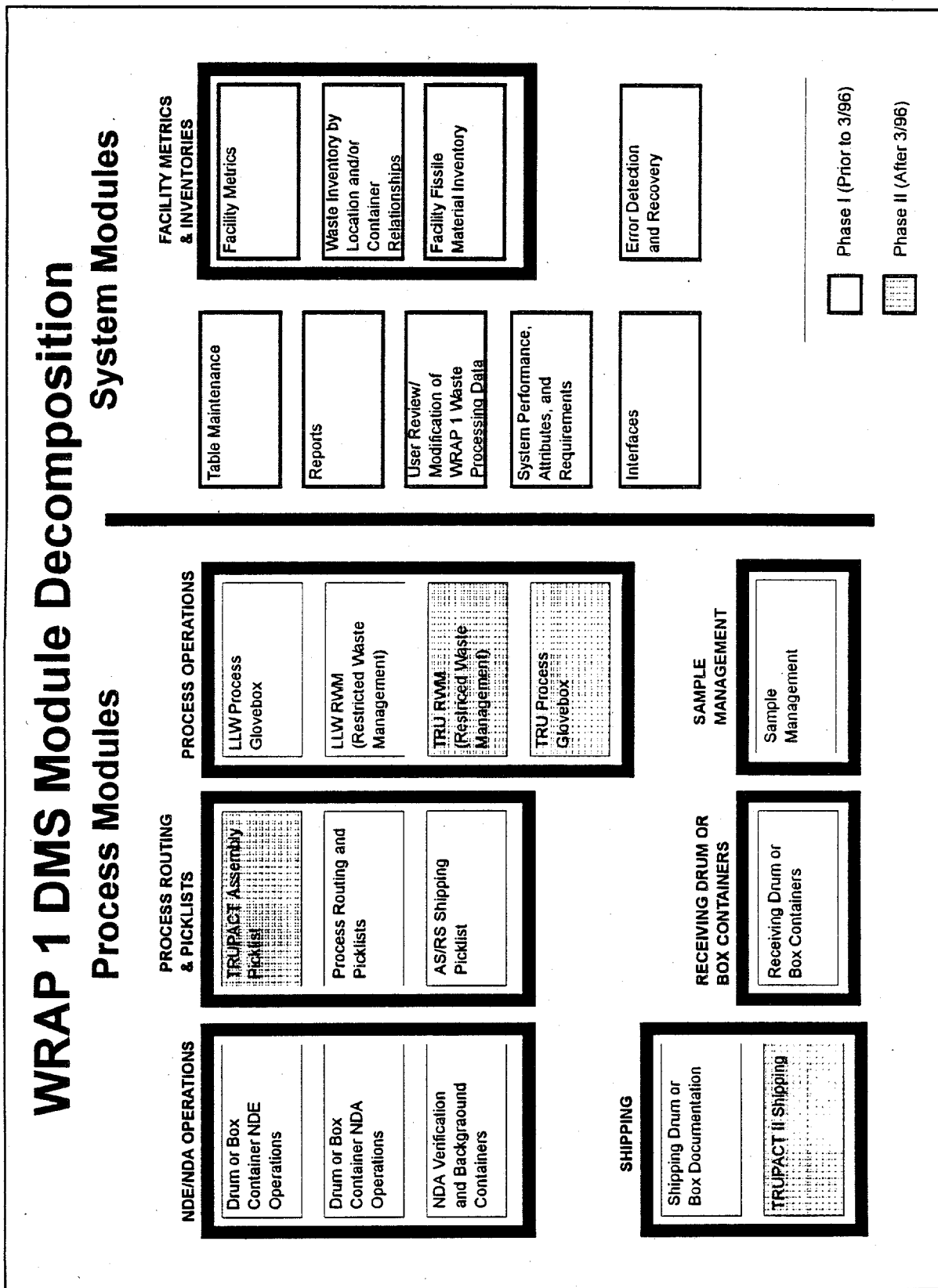


Figure 2-1. WRAP 1 DMS Module Decomposition.

Drum or Box Container NDE Operations; Drum or Box Container NDA Operations; and NDA Verification and Background Containers.

2.1.1.3 Process Operations. Process Operations provides operational data and data collection functions for the process area gloveboxes. Waste drums are removed from overpack containers when applicable, and are opened and emptied. Waste drum contents are sorted, sampled, repackaged, and compacted when possible. Limited waste treatment capabilities will be provided in the RWM gloveboxes. The modules that encompass Process Operations are: Low-Level Waste (LLW) Process Glovebox; LLW Restricted Waste Management; TRU Process Glovebox; and TRU Restricted Waste Management.

2.1.1.4 Sample Management. Sample Management manages the analytical sample data from the point of generation to the final disposal. Activities will include sample tracking and manually updating the WRAP 1 DMS with waste type designators and treatment procedures to be used in the restricted waste management (RWM) gloveboxes. Laboratory analytical results will not be loaded into the WRAP 1 DMS. The module that encompasses the Sample Management function is Sample Management.

2.1.1.5 Shipping. Shipping supports the shipment of empty drums, waste drums and waste boxes from the WRAP 1 facility by providing the proper shipping documentation, verification that the correct drums are in the shipment, and updates to SWITS with certification data, shipping data, and location data. The modules that encompass Shipping are: Shipping Drum or Box Documentation and TRUPACT II Shipping.

2.1.1.6 Process Routing and Pick Lists. This function assists the operations personnel with the creation and maintenance of the various container process routing designations and pick lists for the Automatic Stacker/Retriever System (AS/RS). As the pick lists are selected, they will be uploaded to the PCS. If a pick list or routing code is modified, the modified pick list is uploaded to the PCS. It is assumed that the PCS will overwrite an existing pick list with the new one for that activity. The modules that encompass Process Routing and Picklists are: Process Routing and Picklists; AS/RS Shipping; and TRUPACT Assembly Picklist.

2.1.2 System Modules

The WRAP 1 DMS system modules encompass those functions which are integral to the system operation and maintenance and which are incorporated into each of the process modules. The system modules are: Waste Inventory by Location and/or Container Relationships; User Review/Modification of WRAP 1 Processing Data; Reports; Table Maintenance; Error Detection and Recovery; Interfaces and Communications; and System Attributes, Requirements, and Performance.

2.1.2.1 Waste Inventory by Location and/or Container Relationships. The PCS will send a number of data messages to the WRAP 1 DMS over the WRAP Local Area Network (WLAN) that will be sorted into message types and then operated on according to the type and the data. A major function of the PCS messages is to maintain a dynamic inventory of all waste items and empty drums by interior location at the WRAP 1 facility. The next major function is to maintain relationship records between associated waste items at the WRAP 1 facility.

Each location record update or relationship record generated will also include the current date and time elements.

This function also provides radiological loading audits and checks for the WRAP 1 facility. Radiological limits tracking in WRAP 1 includes tracking total facility inventory and inventory inside the TRU and TRU RWM gloveboxes.

2.1.2.2 User Review/Modification of WRAP 1 Processing Data. The WRAP 1 users will review the WRAP 1 DMS data as applicable to verify that all data required to be generated in WRAP 1 was in fact obtained. Data to be reviewed include all associated waste container tables. Other tables may be added to the user review process as needed. Missing or incorrect data elements will be manually entered or corrected. Once the waste containers have been processed through the WRAP 1 facility and returned to the Shipping Area, satisfactory completion of this activity will allow the waste container to be flagged as "data review complete".

2.1.2.3 Reports. Reports to be generated by the WRAP 1 DMS encompass facility performance data reporting, waste data reporting, reference table reporting, and ad hoc reports. The descriptions for the various reports are in Chapter 5.0. In general, reports generated can be viewed on the screen, printed, or sent to a file.

2.1.2.4 Table Maintenance. Maintenance functions that need to be performed to ensure the efficient and correct operation of the WRAP 1 DMS include SWITS compatible table maintenance and WRAP 1 DMS table maintenance. These functions will be performed by the WRAP 1 System Administrator (SA) and/or the Database Administrator (DBA).

2.1.2.5 Error Detection and Recovery. Error detection and recovery shall be an integral part of the design. Diagnostic software to test the health of the WRAP 1 DMS and the status of the communication interfaces will be provided. Software will also be provided to facilitate restoration to normal operation following a failure. Specific error detection and recovery functions to be provided will be determined during software construction.

2.1.2.6 Interfaces. The DMS will include three general interface types: message communications within the DMS and with other WRAP 1 facility systems (e.g., PCS, SIE, and BWAS); interfaces with SWITS; and user interface.

2.1.2.7 Performance, Attributes, and Requirements. This module encompasses systemic WRAP 1 DMS characteristics including programmed function keys, error and update messages, data acceptance checks, security features, system and data maintenance and administration, transaction log, system backup, and the audit trail. It also addresses the ability of the system to meet the static and dynamic numerical requirements placed on the software or on human interaction with the software as a whole.

2.2 CONCURRENT PROCESS DECOMPOSITION

All modules and processes within each module will be able to operate concurrently; however, operations on any given waste item are performed sequentially. A multiple screen capability shall be available to allow the user to skip to other screens to perform separate functions while suspending

the operations on the current screens. It will also allow the system to pop-up another screen to alert the user or request data on an immediate basis. The concurrent process decomposition for each module is described in Appendix F.

2.3 DATA OBJECT DECOMPOSITION

The records and tables comprising the WRAP 1 DMS will be implemented using Oracle products. The individual data design objects and object attributes are defined in detail in the appendices. Both logical and physical data definitions are described in models and accompanying descriptions. The logical definition is comprised of the Relationship Models, while the physical definition is comprised of the Process Models, Screen Details, Report Details, and Data Dictionary.

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3.0 OBJECT-ORIENTED DESIGN DESCRIPTION

This chapter defines the interaction among design objects and provides the information needed to easily perceive why, how, where, and at what level system actions occur. The object-oriented design description will be expressed through a series of object models. These models define the relationships between objects (Relationship Model) and physical data structure (Process Models).

3.1 INTERMODULE AND INTERPROCESS DEPENDENCIES

This design is structured around modules utilizing shared objects and that will function individually and independently. Each module and database process is dependent on Objects, and may depend upon the results from other modules or processes. These dependencies are related to the container (drum or box) moving from one process area to the next by the routing applied to that container.

For example, the NDE/NDA process is dependent upon the SWITS data downloaded during the previous Receiving process. This is then carried forward to the gloveboxes in the Process area where the NDE/NDA data determines which glovebox to go to and what non-compliant items to look for on the sorting table. The treatments to apply to the non-compliant items are dependent upon the Sample Management process laboratory results. The final process, Shipping, is dependent upon the data collected in the Process Operations area and the NDA process.

Object dependencies within a process are tightly coupled. These object dependencies are discussed in Section 3.3 of this document. This section will discuss the high-level relationships among the WRAP 1 DMS modules and processes.

3.1.1 Work Flow Description

A top-level WRAP 1 process flow diagram is shown in Figure 3-1. The planned mode of operation for the WRAP 1 facility is described in WHC-SD-W026-SD-001, *Waste Receiving and Processing Module 1 Operating Plan* (WHC 1994).

3.1.2 Data Sources

Data sources utilized by the WRAP 1 DMS system include SWITS, the WRAP PCS, the SIE, the BWAS, the HLAN time clock, and user input.

WRAP 1 Process Flow

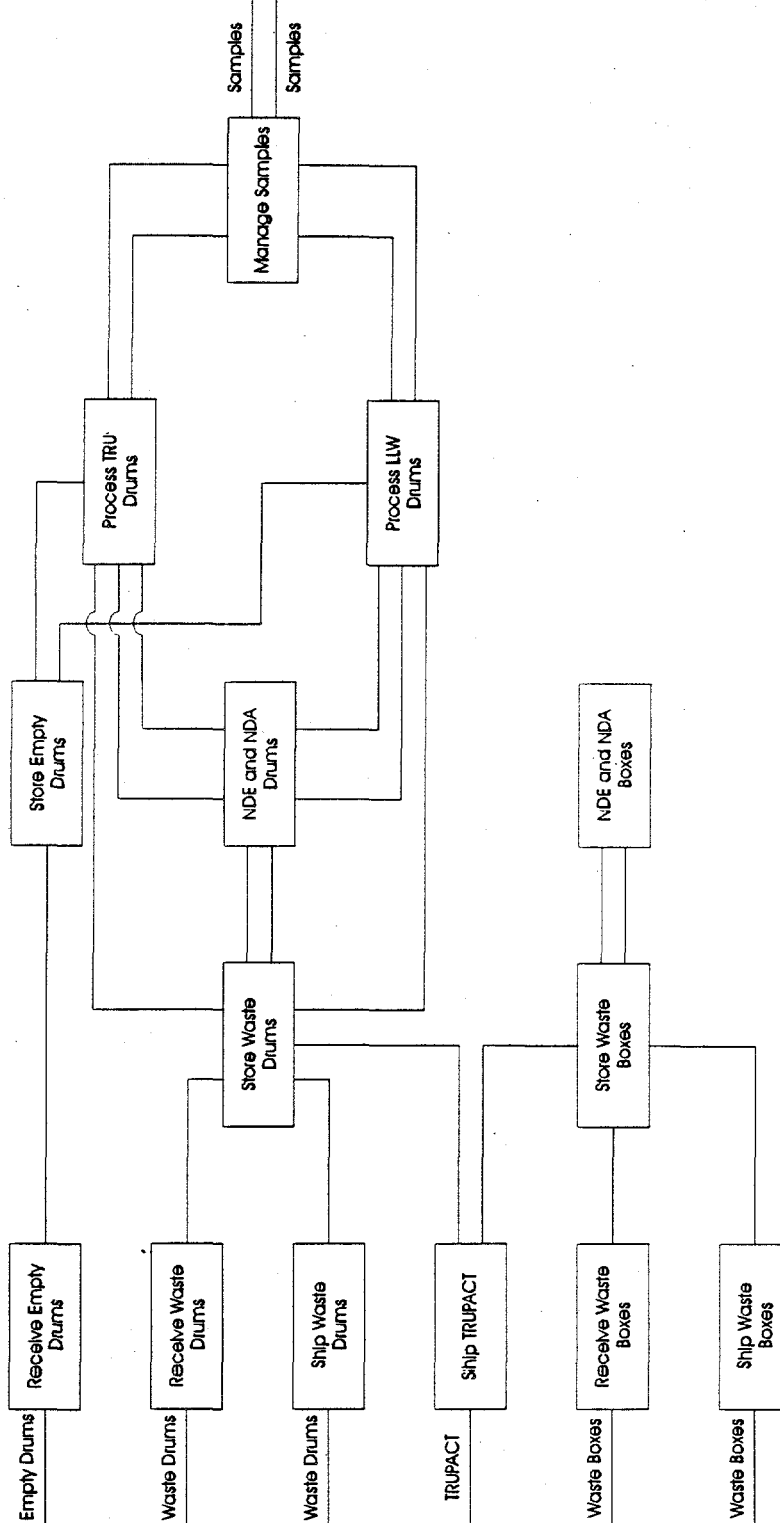


Figure 3-1. WRAP 1 Process Flow.

3.1.3 WRAP 1 DMS System Administration Context Diagram

The *WRAP 1 DMS SRS* is used as the basis for development of the system administration data flow. The system administration context diagram (Figure 3-2) presents a high level view of the interfaces of users and systems manager(s) with the administrative functions of the WRAP 1 DMS. The interfaces to the system's administration activities of the WRAP 1 DMS are:

WRAP 1 Operations Personnel (Operational Users). Operational users are those persons, authorized access to the WRAP 1 DMS, who use the data presentation and data entry screens to perform the functional activities supported by the system.

WRAP 1 Operations Management and Support Personnel. Management and support personnel utilize the WRAP 1 DMS data presentation and data entry screens to review and update data and to generate reports.

System Administrator(s). The system administrator is a high level user who has been granted additional authority to maintain portions of the database that affect overall operation of the system. These include determining the processing authority of other system users, maintaining data validation tables, and tracking system activity.

Operating System Access Controls. The operating system of the computer platform on which the WRAP 1 DMS operates implements security constraints that restrict who may utilize the computer. These constraints must be managed for WRAP 1 DMS users.

WRAP 1 DMS Access Controls. The WRAP 1 DMS system has a more restrictive set of security controls. Access to the WRAP 1 DMS may be by user job function and/or personal authorization.

Developers. The WRAP 1 DMS developers have the responsibility of creating, implementing, and maintaining the Oracle application modules supporting the users' requirements.

The system administration context diagram identifies the processes supporting both administrative and functional users of the WRAP 1 DMS system. These include the following processes performed as part of the system administration activities:

Log onto the computer system. Before accessing any WRAP 1 DMS functions, the potential user must successfully log onto the computer on which the WRAP 1 DMS system resides.

Log onto the WRAP 1 DMS. Based on the security criteria established in the system portion of the WRAP 1 DMS database, each user must log onto the WRAP 1 DMS prior to performing any activity.

Execute WRAP 1 DMS user database transactions. Authorized users execute database transactions to perform those functions required to support their assigned duties in the operation of the WRAP 1 facility.

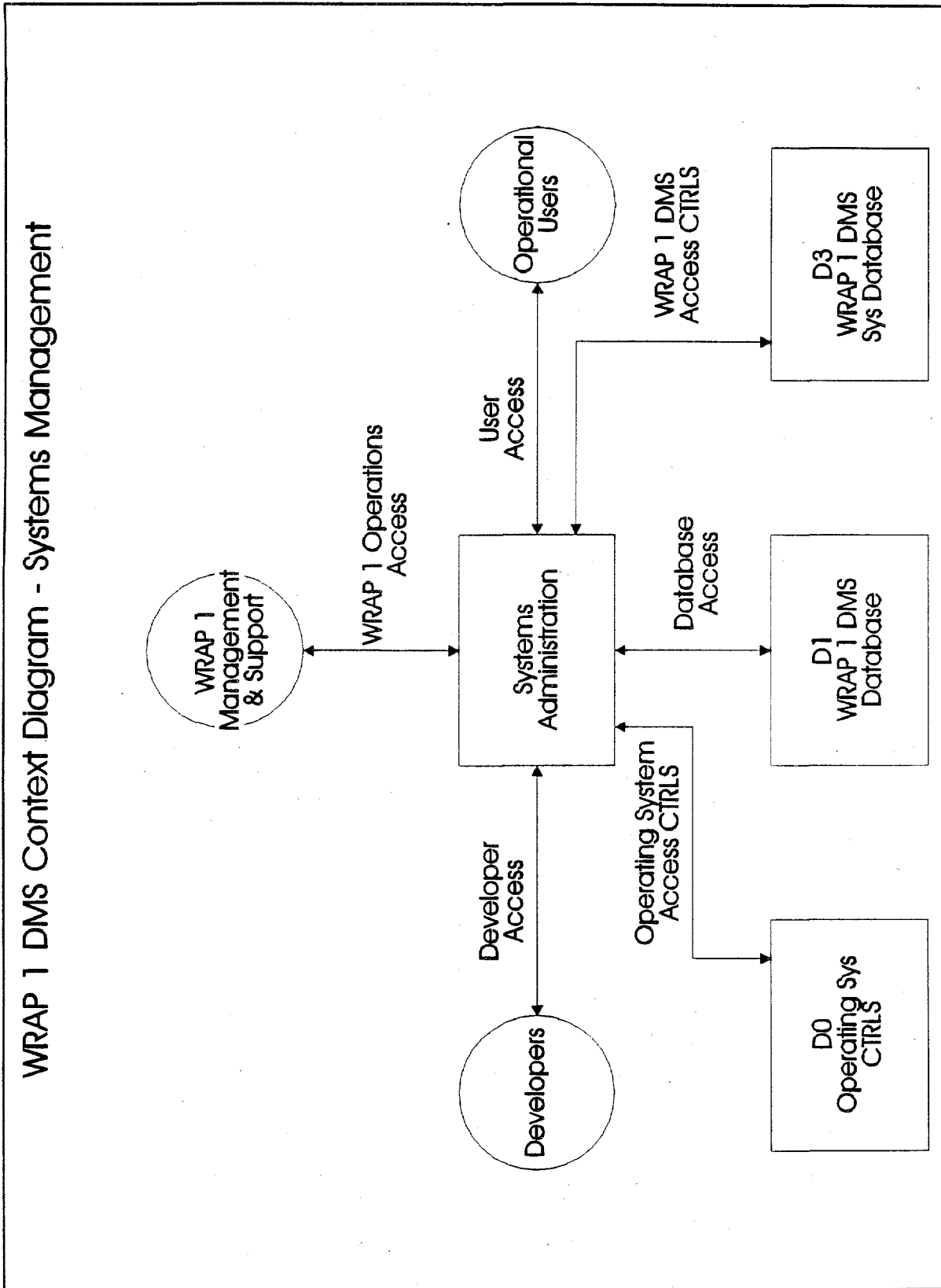


Figure 3-2. Wrap 1 DMS System Administration Context Diagram.

Execute WRAP 1 DMS system manager transactions. Authorized system managers execute database transactions to maintain control, data integrity, and effective use of the overall system.

3.2 OBJECT MODEL DIAGRAMS

Object model diagrams present a view of the processes, data flows, and interfaces supported by the WRAP 1 DMS. The overall business supported by the WRAP 1 DMS can be viewed through Relationship and Process data models. These data models describe the cardinalities, relationships, and data flows between objects. This section describes the object model diagram approach. Detailed object model diagrams are found in Appendices D and F of this document.

3.2.1 Data Dictionary

The Data Dictionary is developed by abstracting all the needed data elements from the Objects. The Data Dictionary contains a summary list of all the Objects and data elements in the WRAP 1 DMS system, as well as an expanded list providing each data element's description and domain (character, number). A large portion of the WRAP 1 DMS data elements were abstracted from the SWITS database and incorporated into the WRAP 1 DMS. The Data Dictionary is provided in Appendix C.

3.2.2 Relationship Model

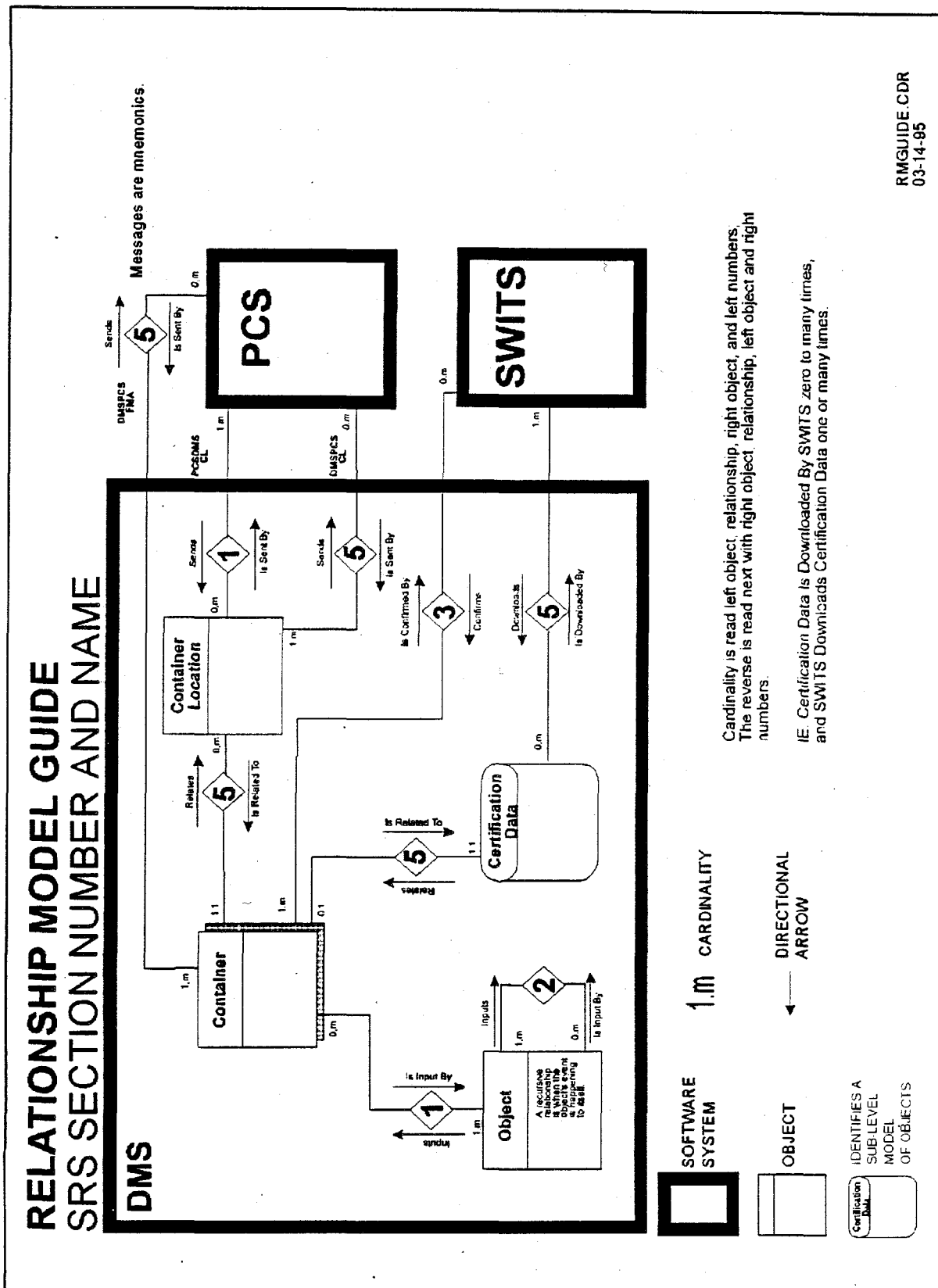
The purpose of the Relationship Model is to create one model that represents an entire system or an entire sub-system or an entire module of a system. The Relationship Model documents the significant connections, associations, or relationships between and among objects. The relationships represent data abstractions between objects that have similar sets of constraints and characteristics. A relationship exists when some number of instances are connected in a significant manner. Relationships can be thought of as a mapping between members of a set (Set Theory); given a member of set A, is a member of set B associated to it?

Relationships use a diamond border to notate associative relationships with transitive verb phrases (is related to), a layered square box to notate objects, and a rectangle box to show software systems. Relationships are bi-directional, and utilize cardinality (multiplicity) to show dependencies or conditionality. Figure 3-3 provides a guide to reading a Relationship Model. Appendix D includes all WRAP 1 DMS module Relationship Models.

3.2.3 Process Model

The Process Model is comprised of a diagram displaying the Physical Unit Processes occurring in a module and a columnar table describing the Unit Processes in the order that they occur.

Each major process is represented in the diagram with a circle that describes the process. Data Stores are represented by an open-ended rectangle containing a vertical line. A line with an arrowhead pointing to or from a



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Cardinality is read left object, relationship, right object, and left numbers.
The reverse is read next with right object, relationship, left object and right numbers.

IE. Certification Data Is Downloaded By SWITS zero to many times,
and SWITS Downloads Certification Data one or many times.

Figure 3-3. Relationship Model Guide.

Process or Data Store represents the data flow direction. Information provided in the columnar table is summarized in Table 3-1. Process Models are presented in Appendix F.

Table 3-1. WRAP 1 DMS Process Model Data.

Column	Description
1.	Process sequence number
2.	Unit Process name
3.	Screens and Reports utilized by the Process
4.	User or system triggers for updates
5.	Conditions and events (or Sub-Unit Processes), including special instructions for the developers (pseudo-code)
6.	Data Stores (actual database table names)
7.	Each attribute in each table that is updated by that Process

3.3 DATA DEPENDENCIES

Computer databases are made up of associated groups of data. The association of data is made at two basic levels, "object" and "database".

Individual data items (or data elements) that support a common function or activity are brought together. This grouping is commonly known as a record or table. In its early design stage, this group is known as an "object."

Groups of related objects are brought together to form a "database." A database may be made up of a single object or many objects linked together.

The linking of multiple objects is accomplished by defining the relationship between objects. The Relationship Model (see Appendix D) is the resulting graphical representation of the database's objects and relationships.

3.3.1 Object Dependency Descriptions

This section describes object dependencies. Dependencies described in this section are preliminary, and will be updated as the system is developed. Appendix C, the Data Dictionary, provides definitions of all WRAP 1 DMS objects.

3.3.1.1 Functional Database Objects. Functional database objects can be grouped according to their support of the primary function object, the CONTAINER object.

3.3.1.1.1 The CONTAINER Object. The CONTAINER object is the central object of the WRAP 1 DMS database. It provides unique information about each waste container and its contents. This is the core object of the database. The main purpose of the WRAP 1 DMS system is to maintain and track occurrences of this object, representing physical waste containers and their contents.

The CONTAINER object encompasses the following container types: box, overpack drum, product drum, empty container, waste container, transfer drum, aerosol can, collection container, calibration drum, packet, purge port, treatment container, and transfer pig.

The CONTAINER object is comprised of the Container and Content Record (WASTE) and Container and Content Extension Record (WASTEXT) tables in the database.

3.3.1.1.2 Objects Dependent on CONTAINER. The following objects are dependent on the CONTAINER object for their existence. Occurrences of these objects will not exist unless there is a corresponding occurrence of the CONTAINER object. The objects dependent on CONTAINER are:

- Activity Comment
- Applicable Material Safety Data Sheet (MSDS)
- Bin
- Hazardous Chemical Component Record
- Container Location
- Container Relationship Record
- Container Treatment
- Discharge Conveyor List
- Field Screening Record
- Hazardous Waste Container Detail Record
- Radioactive Isotope Quantity Record
- Location History Record
- Material Record
- NDA Results
- NDA Isotopic Records
- NDE Results
- Isotopic Distribution
- Payload Container Certification Record
- Payload Assembly Certification Record
- Physical Component Record
- Process Pick List
- Radioactive Waste Container Detail Record
- Receiving Display Record
- Sample Data Reference Record
- Shipment History Record
- Shipping Pick List
- Transfer Car Priority Pick List
- Treatment Worksheet
- TRUPACT Shipping Record
- TRUPACT Shipping Pick List
- Verification Data - Applicable MSDS Record
- Verification Data - Hazardous Chemical Component Record
- Verification Data - Radioactive Isotope Quantity Record
- Verification Data - Container and Content Record.

3.3.1.1.3 Objects Independent of CONTAINER CONTENT. The following objects can occur independent of the CONTAINER object. These objects support data that has value in its own right, regardless of the status of the CONTAINER object. The objects that may exist independent of CONTAINER CONTENT are:

- Chain of Custody
- Radiological Material Inventory History
- Radiological Material Inventory
- Message Log Record
- Processing List
- Sample Data Record
- Security Action Log
- Shipment Item Record
- Shipment Record.
- Shipping List.

3.3.1.2 Systems Management Objects. The systems management objects are those whose primary purpose is to enable the system to attain its functional requirements. These objects are seldom visible to the functional user of the WRAP 1 DMS. Instead, the systems management objects support the functionality of the system software. The systems management objects are divided into the following groups.

3.3.1.2.1 Security and Access Control Objects. The security and access control objects identify authorized users and those system activities and data that each may utilize. It is important to recognize that WRAP 1 DMS data must withstand public comment. The security and access control objects are:

- Procedure Access Table
- Security Table
- User
- User Role.

3.3.1.2.2 Functional Support Objects. Functional support objects provide background data to support the application software. The functional support objects are:

- Error Message Table
- Field Help Table
- Form Help Table
- Procedure Table
- System Bulletins
- Role Table
- User
- User Role.

3.3.1.2.3 Data Integrity and Validation Objects (Look-Up Tables). Data integrity and validation objects are used by the software to dynamically validate the content of data entered by the functional user. By using data objects instead of hard coding the validation values into the software, changes in valid value ranges over time can be quickly and economically handled by simple validation table changes. Appendix H contains a listing of the contents of the look-up tables. The look-up table objects are:

- Calibration Container Table
- Company Table
- Container Size Table
- Container Type Table
- Facility Curie Limit
- DOT Container Specification Table
- Dangerous Waste Number Table
- Facility Table
- Hazardous Chemical Component Table
- Isotope Table
- Laboratory Table
- Container Location Matrix Table
- Location Table
- Material Safety Data Sheets
- Person Table
- Physical Component Description Table
- Package Status Table
- Primary Waste Type Code Table
- Generator Assay Profile Table
- Profile Isotopic Table
- Report Table
- Route Description Table
- Secondary Waste Type Code Table
- Shipment Picklist Description Table
- SIE Isotopic Name Table
- State Table
- Storage Category Table
- TRU Container Code Table
- TSD Facility Table
- Container Use Code Table
- Verification Criteria Limit Table
- WRAP Miscellaneous Table.

3.3.2 Object Relationship Descriptions

This section describes the relationships between objects. These descriptions include specifying the number of instances of a particular object that may relate to a specified number of instances of another object (cardinality).

A number of objects have description names which have been assigned a short form for ease of use in the data models. The following objects and their corresponding short names have been utilized in this section:

- Characterization Data - Char. Data
- Container Relationship - ConRel
- Hazardous Chemical Component - ChemComp
- Hazardous Waste Container Detail - HazDetail
- Radioactive (Rad) Contents - Isotope
- Radioactive Isotope Quantity - IsoQty
- Radioactive Waste Container Detail - RadDetail
- Shipment History - ShpHst
- Treatment, Storage, or Disposal - TSD.

3.3.2.1 Functional Database Relationships. Functional database relationships are associated with functional database objects. These relationships support the associations of data that comprise the operational system functions within the database. This section also identifies the process functions (see Section 2.1.1) in which each type of relationship is valid. The relationships in this group are:

Activity Comment-Container. A activity comment may be related by one container. A container relates zero, one, or many activity comments. (NDE/NDA; Process Operations; Sample Management)

Activity Comment-User. An activity comment may be updated by one user. A user may update zero, one or many activity comments. (NDE/NDA; Process Operations; Sample Management)

Generator Assay Profile-Container. A generator assay profile is related to one or many containers. A container relates to one generator assay profile. (NDE/NDA)

Generator Assay Profile-User. A generator assay profile is requested by one user. A user requests one generator assay profile. (NDE/NDA)

Certification Data-Container. A set of certification data (see Section 3.3.2.2) relates to one container. A container may be related to zero or one set of certification data. (Receiving, NDE/NDA)

Characterization Data-User. A set of characterization data is requested by one or many users. A user may request zero, one, or many sets of characterization data. (NDE/NDA)

Company-User. A company is displayed to one user. A user may display one company. (Shipping)

Person-User. A person is displayed to one user. A user may display zero, one, or many persons. (Shipping)

Facility-User. A facility is displayed to one user. A user may display zero, one, or many facilities. (Shipping)

Mixed Contents-User. A mixed contents record is displayed to one user. A user may display zero, one, or many mixed contents records. (Shipping)

Manifest-User. A manifest is displayed to one user. A user may display zero, one, or many manifests. (Shipping)

TSD Facility-User. A treatment, storage, and disposal (TSD) facility is displayed to one user. A user may display zero, one, or many TSD facilities. (Shipping)

Shipment Item-User. A shipment item is displayed to one user. A user may display zero, one, or many shipment items. (Shipping)

Container-Company. A container is related to zero or one companies. A company may relate to zero, one, or many containers. (Shipping)

Container-Bin. A container is related to zero or one bin. A bin may relate to one to four containers. (Process Routing and Picklists)

Container-Container Location. A container is related to one container location. Each container location may relate to zero, one, or many containers. (Receiving; NDE/NDA; Process Operations; Sample Management; Shipping; Process Routing and Pick Lists)

Container Location-Puck. Each container location may relate to zero, one, or many pucks. A puck is related to one container location. (Process Operations)

Container-Container Relationship. A container may be related to zero, one, or many container relationships. A container relationship relates two containers. (NDE/NDA; Process Operations; Sample Management)

Container-Process Pick List. A container may be related to zero or one process Pick List. A Process Pick List may be related to zero, one, or many containers. (Process Routing and Picklists)

Container-Facility. A container is related to one facility. A facility may relate to zero, one, or many containers. (Shipping)

Container-Person. A container is related to zero or one persons. A person may relate to zero, one, or many containers. (Shipping)

Container-Shipment History. A container may relate to zero or one shipment history records. A shipment history record is related to one or many containers. (Shipping)

Container-Shipping Pick List. A container may relate to zero or one shipping pick list. A shipping pick list is related to one or many containers. (Shipping)

Container-Waste Category. A container relates to one waste category. A waste category may be related to zero, one, or many containers. (Shipping)

Container-Radiologic Inventory. A container may relate to zero or one fissile material inventories. A fissile material inventory may be related to one or many containers. (Receiving)

Container-HazDetail. A container relates to zero or one hazardous component detail records. A hazardous component detail record is related to one container. (Process Routing and Pick Lists)

Container-History. A container may be related to zero, one, or many history records. A history record relates to zero, one, or many containers. (NDE/NDA)

Container-PhysComp. A container relates to zero, one, or many physical composition records. A physical composition record is related to one container. (Process Operations)

Container-Process Pick List. A container relates one process pick list. A process pick list is related to one or many containers. (Process Routing and Pick Lists)

Container-RadDetail. A container relates to zero or one radioactivity detail records. A radioactivity detail record is related to one container. (Process Operations; Process Routing and Pick Lists)

Container-Sample. A container relates to zero, one, or many samples. A sample is related to one container. (Sample Management)

Sample Container-Sample. A sample container may be related to zero or one samples. A sample relates to one sample container. (Sample Management)

Container-User. A container is input by zero, one, or many users, or a container is updated by one or many users. A user may input or update one or many containers. (Receiving; Process Operations)

Container-Verification Data. A container may relate to zero or one set of verification data. A set of verification data is related to one container. (NDE/NDA; Sample Management)

Container Location-Location. A container location associates with zero, one, or many locations. A location is associated with one container location. (Receiving; NDE/NDA; Process Operations; Sample Management; Shipping; Process Routing and Pick Lists)

Container Location-User. A container location may be displayed by zero, one, or many users. A user may display zero, one, or many container locations. (Process Routing and Pick Lists)

History-Verification Data. A history record stores zero, one, or many verification data sets. A verification data set may be stored by one or many history records. (NDE/NDA)

Laboratory-Sample. A laboratory analyzes zero, one, or many samples. A sample is analyzed by zero or one laboratories. (Sample Management)

Laboratory-User. A laboratory is selected by zero, one, or many users. A user may select zero, one, or many laboratories. (Sample Management)

Location-User. A location is selected by one or many users. A user selects one or many locations. (NDE/NDA)

Mixed Contents-User. A mixed contents record may be updated by zero, one, or many users. A user may update zero, one, or many mixed contents records. (Sample Management)

Mixed Contents-Verification. A mixed contents record is related to zero or one verification records. A verification record may relate to zero or one mixed contents records. (Sample Management)

PhysComp-User. A physical composition record is updated by one or many users. A user may update zero, one, or many physical composition records. (Process Operations)

RadDetail-User. A radioactivity detail record is updated by zero, one, or many users. A user may update zero, one, or many radioactivity detail records. (Process Operations)

Sample-Sample Chain of Custody. A sample relates zero or one sample chain of custody. A sample chain of custody is related to one or many samples. (Sample Management)

Sample-User. A sample is updated by zero, one, or many users. A user may update zero, one, or many samples. (Sample Management)

Sample Container-User. A sample container is updated by zero or one users. A user may update zero, one, or many sample containers. (Sample Management)

Sample Chain of Custody-User. A sample chain of custody is updated by zero, one, or many users. A user may update zero, one, or many sample chains of custody. (Sample Management)

Container Treatment-Treatment Worksheet. A container treatment is defined by one treatment worksheet. A treatment worksheet defines one container treatment.

Container-Treatment Worksheet. A container is treated by one treatment worksheet. A treatment worksheet treats one or many containers.

Treatment Worksheet-User. A treatment worksheet is input by zero, one, or many users. A user inputs zero, one, or many treatment worksheets.

User-User. A user validates one user (signature password). A user (signature password) is validated by one user.

User-Verification. A user may update zero, one, or many verification records. A verification record may be updated by zero, one or many users. (Sample Management)

3.3.2.2 Certification Data Set Relationships. This section describes the object relationships within the certification data set.

Container-Container Relationship. A container may be related to zero, one, or many container relationships. A container relationship relates two containers.

Container-Physcomp. A container may be related to zero, one, or many physical composition records. A physical composition record relates one container.

Container-HazDetail. A container may be related to zero or one hazardous detail records. A hazardous detail record relates one container.

Container-ChemComp. A container may be related to zero, one, or many chemical composition records. A chemical composition record relates one container.

Container-RadDetail. A container may be related to zero or one radiologic detail records. A radiologic detail record relates one container.

Container-IsoQty. A container may be related to zero, one, or many isotopic quantity records. An isotopic quantity record relates one container.

3.3.2.3 NDE Characterization Data Set Relationships. This section describes the object relationships within the NDE characterization data set.

Container-Physcomp.

Container-RadDetail.

3.3.2.4 NDA Characterization Data Set Relationships. This section describes the object relationships within the NDA characterization data set.

Container-RadDetail.

3.3.2.5 Functional Relationships Between Database Objects and Exterior Entities. In addition to the functional relationships between WRAP 1 DMS database objects described above, there are also functional relationships between WRAP 1 DMS database objects and specific exterior entities. These relationships provide associations of data to activate or conclude operational system functions. The relationships in this group are:

Assay Profile-BWAS. (NDE/NDA)

Assay Profile-SIE. (NDE/NDA)

Company-SWITS. (Shipping)

Container-PCS. (Receiving; Process Operations; Sample Management)

Container-SWITS. (Receiving)

Container Location-PCS. (Receiving, NDE/NDA, Process Operations; Sample Management; Shipping)

Certification Data-BWAS. (NDE/NDA)

Certification Data-SIE. (NDE/NDA)

Certification Data-SWITS. (Receiving)

Facility-SWITS. (Shipping)

PAM Results-PCS. (Process Operations)

Person-SWITS. (Shipping)

Shipment History-SWITS. (Shipping)

Time-HLAN. (Receiving; NDE/NDA; Process Operations; Sample Management; Process Routing and Pick Lists; Shipping)

User-PCS. (Process Routing and Pick Lists)

User-SWITS. (Receiving, Shipping)

Verification Data-BWAS. (NDE/NDA)

Verification Data-SIE. (NDE/NDA)

Waste Category-SWITS. (Shipping)

3.3.2.6 Systems Management Relationships. Systems management relationships are associated with the corresponding objects. These relationships support the functional association of data that provides the background systems services for the WRAP 1 DMS system. The relationships in this group are:

User-Person. A WRAP 1 DMS User is a Person. A Person may or may not be a User.

User Role-User. A User Role is related to one User. A User may have one or more User Roles.

User Role-Role. A User Role must be a valid Role. A Role may be related to zero, one, or many User Roles.

3.4 PHYSICAL DATA MODEL

The physical data model translates the object/relationship definition into the form acceptable to the DBMS being used. The WRAP 1 DMS data model is translated into a series of Oracle tables and indexes. In general, objects become tables and relationships become indexes.

Complex applications often require unusual combinations of data in order to achieve the requirements of the user. Special definition subsets of the database may be identified to meet these requirements. Such subsets are known as "views." There is no limit to the number of views that may be defined in support of a relational database.

This section describes the physical database model, the database tables, the indexes that make accessing the database more efficient, and the specialized views of the database that have been defined to further simplify processing.

3.4.1 Data Dictionary

The data dictionary (see Appendix C) identifies the database tables and the indexes supporting each table. Each index is identified as either unique or foreign (non-unique).

3.4.2 Indexes

Indexes are pathways through the database that permit the user to quickly access specific data without having to physically look at every record (row) of a table in order to locate desired data. Indexes are normally sorted on a data item in the table. While ascending order is the most common, descending order may be selected. Indexes are of two basic types: unique and non-unique.

3.4.2.1 Unique Indexes. A unique index cannot contain any duplicate key values. This feature ensures that one and only one table occurrence exists for a particular key value. The unique index is always used to identify the primary key of a table. Primary keys are identified in the Data Dictionary, Appendix C.

3.4.2.2 Foreign Indexes. This type of index is used to provide other pathways through the database to support specific requirements (i.e., searching, sorting, joining). Typically, foreign key fields have non-unique indexes defined.

3.5 NETWORK DEPENDENCIES

The WRAP 1 DMS system will primarily support users at the WRAP 1 facility, although some users will be located throughout the Hanford Site. Users will access the system through the WRAP Local Area Network (WLAN) or the Hanford Local Area Network (HLAN). The WRAP 1 DMS will access the SWITS through the HLAN. This section describes those features of the WLAN and HLAN networks that will be utilized in support of WRAP 1 DMS processing.

WRAP 1 plant terminals accessing the WRAP 1 DMS database will utilize the WLAN network for access to the database computer. Some terminals external to the WRAP 1 facility will utilize the HLAN to access the WRAP 1 DMS database. The network diagram is provided in Figure 3-4.

The WRAP 1 DMS will interface to the SWITS database over HLAN to acquire the initial data on drums and boxes arriving at the WRAP 1 facility and will update the SWITS database with the necessary certification data on shipments of waste from the WRAP 1 facility. The WRAP 1 DMS will communicate with the WRAP 1 PCS, the SIE, and the BWAS over the WLAN to provide these other systems with required data and to receive location and characterization data. Terminals located throughout the plant will be used to review and enter data. Figure 3-4 presents a system architecture layout showing the WRAP 1 DMS communication interfaces, and Figure 3-5 presents a context diagram showing the WRAP 1 DMS data interfaces. The WRAP 1 DMS database will reside on a computer connected to the WLAN. The WRAP 1 DMS computer (server) must communicate with all of the computers and terminals represented in this figure.

An electronic interface may be implemented for waste data package transmission to the Waste Isolation Pilot Plant (WIPP). Details of this interface have not been defined at this time.

3.6 CONVERSION DEPENDENCIES

Due to the similarity of the WRAP 1 DMS data and reporting requirements with those of SWITS, the WRAP 1 DMS will, where applicable, copy/duplicate the data structures of the SWITS Oracle database. The WRAP 1 DMS design will also incorporate appropriate SWITS applications and reports. Final determination of specific database structures and applications to be utilized will be done during detailed design. Final screens and reports will be reviewed by the users online during construction. The WRAP 1 DMS system will comply with current SWITS data standards and data element naming criteria.

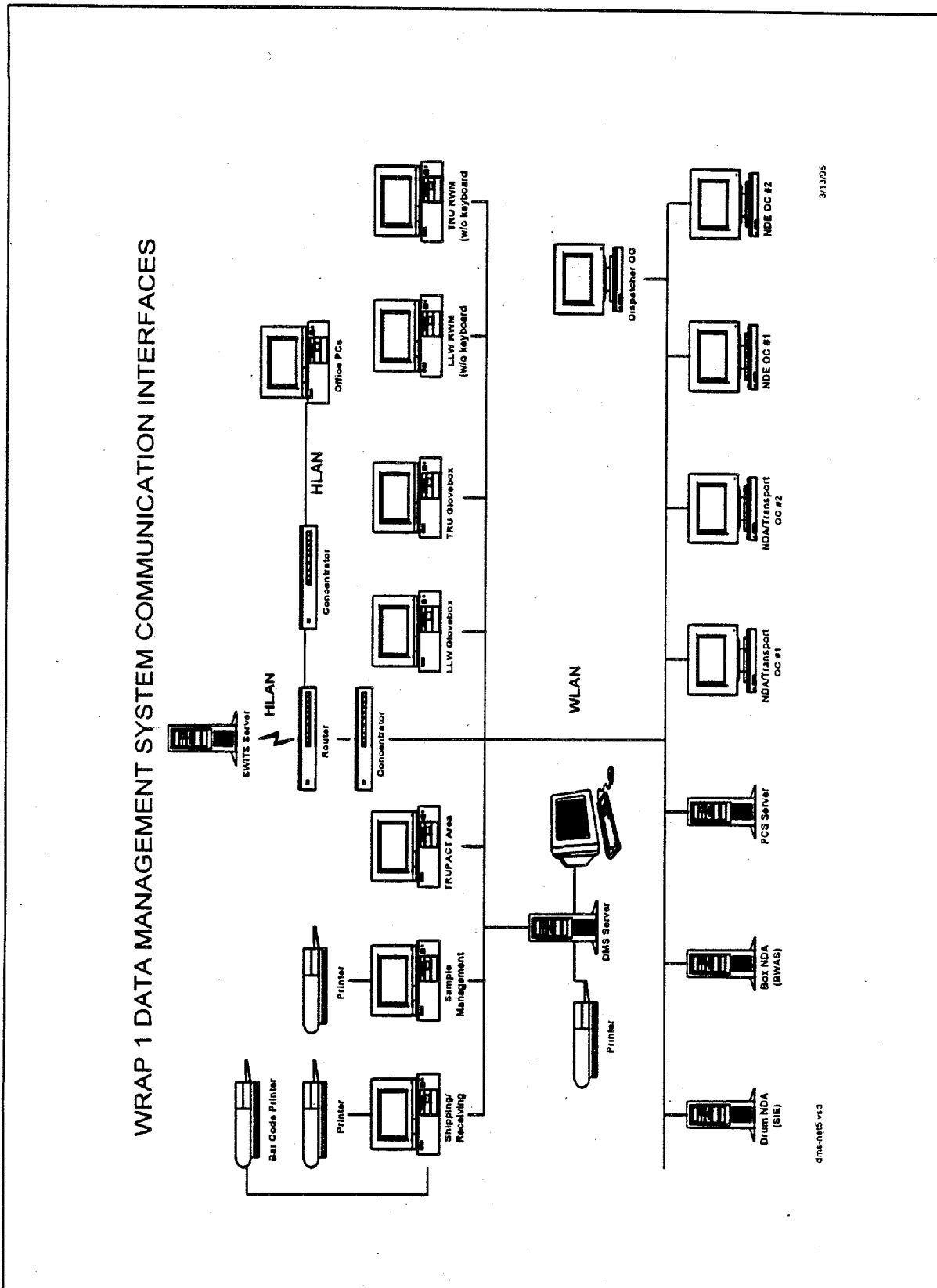


Figure 3-4. Data Management System Communications Interface.

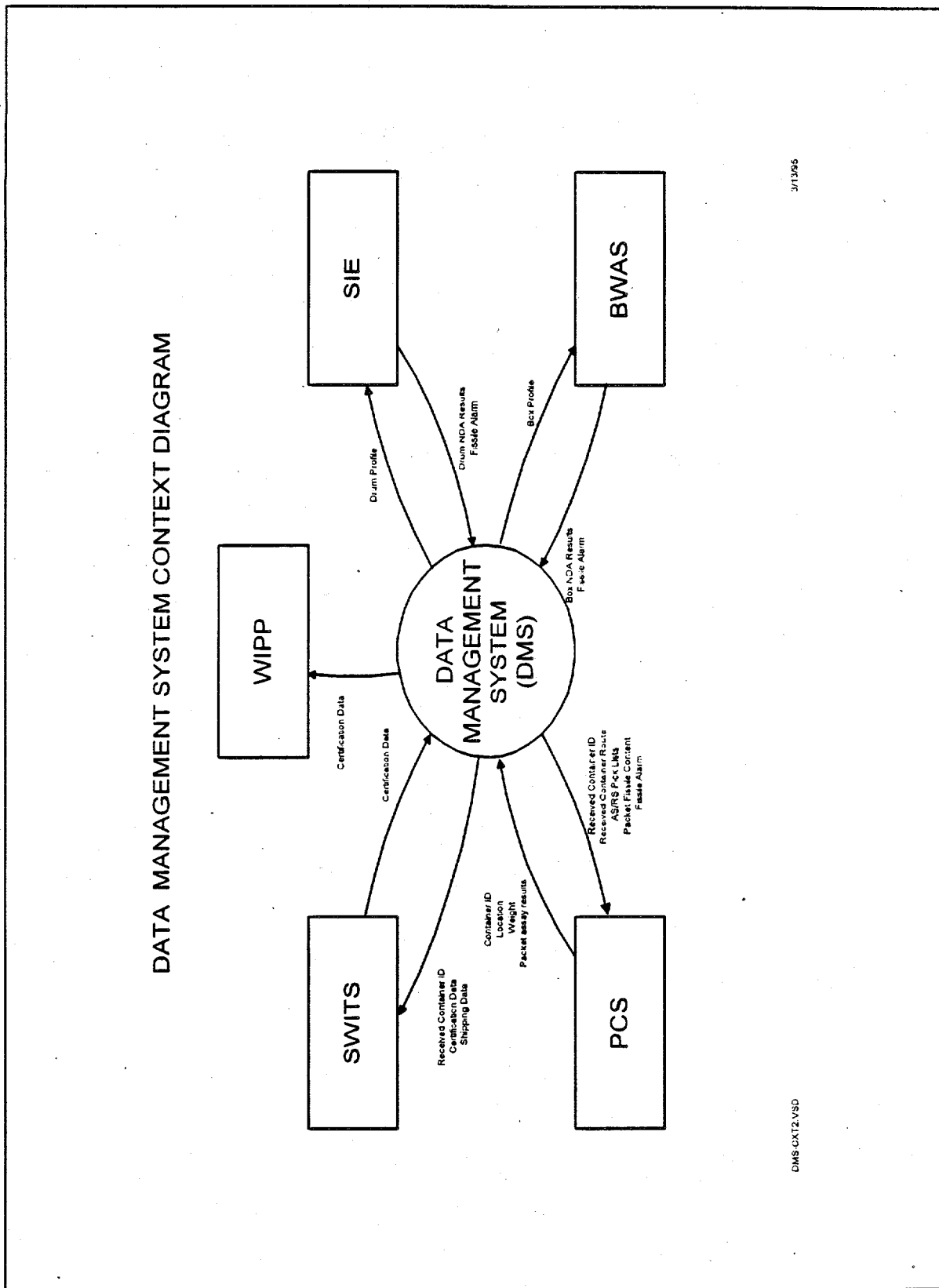


Figure 3-5. Data Management System Context Diagram.

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4.0 INTERFACE DESCRIPTION

Chapter 4.0 provides a high-level description of the interfaces inherent in the WRAP 1 DMS. Internal, external, and human/machine interfaces are utilized by the WRAP 1 DMS. These interfaces enable needed access to WRAP 1 DMS data by persons and other computer systems.

4.1 INTERNAL INTERFACES

The ORACLE relational database management system provides the management of the WRAP 1 DMS data. Oracle Forms Version 4.0 and Oracle Reports Version 1.1 are the principal programming tools.

4.2 EXTERNAL INTERFACES

External interfaces are those interfaces outside the WRAP 1 DMS software application product. These interfaces include other software products, systems enabling communication with external systems, and the associated hardware.

4.2.1 Software Interfaces

Software interfaces are interactions between the WRAP 1 DMS application software and other software products, such as data management systems, operating systems, process and equipment control systems, or other application systems. Interfaces with the vendor supplied software products, i.e., Pro-C, C, and Oracle and its interface products including Oracle Forms, Oracle Reports, and SQL*Net.

The WRAP 1 DMS software interfaces include SQL*NET calls to and from the SWITS database to allow remote access. The remote access to and from the PCS, SIE, and BWAS will be handled by the WRAP 1 DMS Interface module. Software interfaces describe the application software interfaces to the vendor supplied software products, such as the use of Oracle and its interface products such as SQL*Forms, SQL*Reports, and SQL*Net.

4.2.2 Communications Interfaces

The communication interfaces to the WRAP 1 DMS are the HLAN and WLAN. Operations users and development staff access the WRAP 1 DMS server through the Ethernet connections to one of the available LANs. The WRAP 1 DMS will interface to the SWITS database over the HLAN to acquire the initial data on drums and boxes arriving at the WRAP 1 facility. The WRAP 1 DMS will also update the SWITS database with the necessary certification data on shipments of waste from the WRAP 1 facility. The WRAP 1 DMS will communicate with the

WRAP 1 PCS, the drum NDA SIE and the box NDA BWAS over the WLAN to provide the other systems with required data and to receive location and characterization data. Terminals located throughout the plant will be used to review and enter data.

An electronic communications interface may be implemented for waste data package transmission to the Waste Isolation Pilot Plant (WIPP). Details of this interface have not been defined at this time.

4.2.3 Hardware Interfaces

Hardware interfaces describe the interface of the application software with the hardware, such as devices to be supported and protocols to be used. The WRAP 1 DMS host hardware has been selected to meet anticipated capacity and performance requirements (disk space, main memory, and peripheral devices) of the system. The DMS will run on a Hewlett Packard HP-9000 Model 800/E35 computer using the HP-UX (UNIX) operating system. User access will be from HP Vectra 486DX/66 personal computers (PCs) and HP ENVIZEX A Series X stations. The interfaces with the hardware will be transparent to most users. The users access the host using IBM-PC compatible personal computers and/or X-terminals operating over the WLAN. Each user is required to have a username/password and a signature password in order to update or modify critical data. The specific steps required for computer access will be provided in the *WRAP 1 DMS User Manual*.

4.3 MAN/MACHINE INTERFACES

The interface between the user and the WRAP 1 DMS system is necessary to the effective utilization of the system. This section describes the characteristics of the human interfaces to the system.

4.3.1 WRAP 1 DMS Security

The primary purpose of the Data Management System (DMS) security system is to prevent unauthorized production, modification, validation, or use of data. This function is performed by granting permission via signature password to users who have the proper training and authority to perform critical data manipulation functions. A secondary purpose of security is to prevent nonessential functions from bogging down the system. This purpose is achieved by defining a set of user groups and granting access to various DMS functions based on the job descriptions of the system users included in the groups. A logon password would be assigned to each user which would identify the appropriate user group. Both the signature password and the logon password are described in the DMS SRS. The following user groups have been defined:

System Administrator (SADMIN). DMS superuser and system administrator. This person is not technically a group since no functions are restricted. Read and write access is provided to all fields and data structures in the DMS as well as access to DMS and "C" development functions. This group would be responsible for setting up and maintaining the database structure including

the tables and displays. This group is authorized to change anything within the system and consequently, any existing DMS security will be bypassed.

Engineering Development (ENGDEV). This group should have read access to all screens and data fields as well as write access to the Lookup and data validation table entries but not table or database structures. No write access would be provided to actual waste data records. Access to DMS and the "C" development would be provided on a development system functions. This group would recommend and design changes to improve the system or meet new requirements. The design work would be performed on a development system prior to implementation by the system administrator. Security is by individual user ID logon.

Operations Administrator (OPSADM). This group should have read access to all screens and data fields. Write access should be provided for planning and scheduling functions. These functions include shipping and receiving, pick list/processing list maintenance, sample data, and reports. This group would be responsible for scheduling waste to be received and shipped. This includes facilitating paperwork assembling and ensuring that SWITS data is sufficient to allow processing in WRAP 1. Security is by individual ID logon.

SWOC Administrator (OPSADM). This group should have read and write access only to the screens where waste being shipped to WRAP 1 is assembled. The screens filled in by this group are used by the receiving operators accept shipments into WRAP 1. This is primarily a waste planning function for SWOC. Another function of this person could be to verify that SWITS has sufficient information for the waste to be processed at WRAP 1 prior to sending it there. Security is by individual ID logon.

NDA Analyst (NDAANL). This group should have read access to all screens and data fields. This group has write access to all NDA data and will be required to validate all NDA data. Security is by individual ID logon.

Operations Supervisor (OPSSUP). This group should have read and write access to all screens and data fields regarding waste data including ability to change alarm setpoints and clear alarms. Security is by individual user ID logon.

General Operator (GENOPS). This group should have read access to all screens and data fields regarding waste data well as write access to non alarm setpoints and control functions as guided by procedure. Write access is also allowed for data entry and controlled by a signature password. Report printing required by procedure to is also allowed. Security is by group ID logon which will be the normal logon state of the terminal during operation.

Monitor (MONITR). This group should have read only access to all screens and data fields. Printing of limited reports should be allowed. Security is by group ID logon.

Table 4-1. DMS Screen/Data Access Table.

DMS Category No.	Screen/Data Description	Access Privileges	
		Read	Write
1	Shipping	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
2	Receiving	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
3	NDE/NDA	All Groups	SADMIN, NDAANL and w\sig password OPSADM, OPSSUP, GENOPS
4	Process Operations	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
5	Sample Management	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
6	Fissile Inventory	All Groups	SADMIN
7	Process Data Review	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
8	Bar Code Labels	All Groups	SADMIN, OPSADM, OPSSUP, GENOPS
9	Reports	All Groups	SADMIN, and w\sig password ENGDEV, OPSADM, NDAANL, OPSSUP, GENOPS, MONITR
10	Pick Lists	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
11	Process Routes	All Groups	SADMIN, and w\sig password OPSADM, OPSSUP, GENOPS
12	Data Validation Tables	All Groups	SADMIN, ENGDEV, OPSADM
13	System Administrati on	All Groups	SADMIN

An additional level of security could be imposed by limiting some screens to specific terminals within the facility. Table 4-2 lists the workstations which would need access to each category of screens.

Table 4-2. Workstation Access by DMS Category.

DMS Category No.	Category Description	Required Workstation Access	
		Read	Write
1	Shipping	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 TRUPACT Station 101-TE-12-124 Sample Management Office 109-TE-12-107
2	Receiving	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 TRUPACT Station 101-TE-12-124 Sample Management Office 109-TE-12-107
3	NDE/NDA	All	Control Room NDE #1 201-CNS-12-101 Control Room NDE #2 201-CNS-12-102 Control Room NDA #1 201-CNS-12-103 Control Room NDA #2 201-CNS-12-104 Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 LLW Process Area 107-TE-12-103 TRU Process Area 107-TE-12-104 Sample Management Office 109-TE-12-107
4	Process Operations	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 LLW Process Area 107-TE-12-103 TRU Process Area 107-TE-12-104 Sample Management Office 109-TE-12-107
5	Sample Management	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 LLW Process Area 107-TE-12-103 TRU Process Area 107-TE-12-104 Sample Management Office 109-TE-12-107
6	Fissile Inventory	All	Control Room NDA #1 201-CNS-12-103 Control Room NDA #2 201-CNS-12-104 Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 TRUPACT Station 101-TE-12-124 TRU Process Area 107-TE-12-104

DMS Category No.	Category Description	Required Workstation Access	
		Read	Write
7	Process Data Review	All	Control Room NDE #1 201-CNS-12-101 Control Room NDE #2 201-CNS-12-102 Control Room NDA #1 201-CNS-12-103 Control Room NDA #2 201-CNS-12-104 Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 TRUPACT Station 101-TE-12-124 LLW Process Area 107-TE-12-103 TRU Process Area 107-TE-12-104 Sample Management Office 109-TE-12-107
8	Bar Code Labels	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 TRUPACT Station 101-TE-12-124 Sample Management Office 109-TE-12-107
9	Reports	All	Control Room NDE #1 201-CNS-12-101 Control Room NDE #2 201-CNS-12-102 Control Room NDA #1 201-CNS-12-103 Control Room NDA #2 201-CNS-12-104 Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 Sample Management Office 109-TE-12-107
10	Pick Lists	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108
11	Process Routes	All	Control Room NDA #1 201-CNS-12-103 Control Room NDA #2 201-CNS-12-104 Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109 S/R Office 101-TE-12-108 TRUPACT Station 101-TE-12-124 LLW Process Area 107-TE-12-103 TRU Process Area 107-TE-12-104
12	Data Validation Tables	All	Control Room Dispatcher 201-CNS-12-105 Computer Room 202-TE-12-109
13	System Administration	All	Computer Room 202-TE-12-109

3.2 User Interfaces

User interfaces consist of the inputs, outputs, and displays on a display terminal used or seen by a WRAP 1 DMS user. All user interfaces will be tailored to the needs of the functional user. Selecting a particular option would allow access to data, provided the user has appropriate privileges.

All primary screens will have a "fast access" capability. Each screen displayed will be structured for ease of use. Navigational aids will be available to assist the user in maneuvering through the system. Error messages, along with possible resolution options, will be displayed on the screen when the system detects an error. User training will be addressed in the WRAP 1 DMS training and users manuals.

Printing of reports will not be suspended when user transfers to another screen. In some instances, the system will automatically display a message screen to alert the user or to request user input.

User reports fall into two categories: reports that generate certification and transportation papers for disposal and transport; and reports that support facility operations such as drum/box inventories, fissile material inventory for the facility, AS/RS pick lists, etc. Provisions will be made to assure that the printing of reports will not adversely impact facility operations.

4.3.3 Developer Interface

Responsibilities of the WRAP 1 DMS development staff include creating, implementing, and maintaining the Oracle application modules supporting the user's requirements. By the nature of these responsibilities, developers must have a high-level access authority to the WRAP 1 DMS system.

4.3.3.1 Data/Database Administration. The data/database administrator has authority to update the database structure, perform global data manipulation, and maintain the data dictionary.

4.3.3.2 Developers. Developers have authority to modify the application software, perform pre-authorized global data manipulation, maintain and access a development/test database, and access the production database.

5.0 DETAILED DESIGN

This chapter describes the internal details and specifications of the design modules and their associated objects. This chapter provides the developers with general programming guidelines and standards, including the mechanisms used in the navigation within the WRAP 1 DMS system. It also provides specifications for the processing modules, reports, and supporting utilities.

5.1 GENERAL DESIGN SPECIFICATIONS

This section describes the general design guidelines and standards that will be used in the development of the WRAP 1 DMS system. These design rules are to be applied to all development processes, including both the online screens and the generated reports. Any deviation to these guidelines is documented indicating where the guideline is not being followed. The general design rules are as follows:

- All data fields will translate to Uppercase, except where specified.
- All Date type fields will be displayed in MM/DD/YY format.
- All fields described as FLOAT will be displayed in scientific notation four significant digits (i.e., -x.xxxE-xx).

Example: 123.4 is 1.234E+02
 1.234 is 1.234E+00
 .1234 is 1.234E-01

- All fields described as NUMBER with precision specified will be displayed appropriately.
- All enterable screen fields will make use of the Autohint feature, which displays a message upon entering the field. Applicable units of measure will be indicated in this message.
- All container-related fields will make use of the Journal feature, which records a history of all changes.
- On formatted screens (update and display), the Tab and Backtab functions cause the cursor to go from field to field for all enterable fields on the screen.
- All screens will have a similar appearance. They will contain the screen number, the WRAP 1 DMS title, date, time, and a message line.

- All reports will be in a similar format. The report number, WRAP 1 DMS title, date, time, page number, and report headings will appear in the same relative position.
- All quantities for volumes, weights, and areas will be stored in metric units (cubic meters, kilograms, square meters).

5.1.1 Screens

All screens will be constructed using Oracle Forms 4.0. Microsoft graphical user interface (GUI) User Standards will be applied as development standards where possible.

5.1.2 Error and Message Handling

Individual and detailed error and message handling is described in Appendix F. This feature is incorporated into the design of individual modules.

5.1.3 System Security

The first level of security will be provided by the necessity to have a valid user identifier and password to access the host computer. This feature is part of the host operating system.

The second level of security will require that the database administrator provide a user identifier to the WRAP 1 DMS system. An Oracle User Identifier and Password will be used to verify users in logging into the Oracle RDBMS.

The third level of security will be provided by the necessity to have internal user roles and privileges. Users will have limited authorized access to the functional modules in the WRAP 1 DMS based on their logon role.

5.1.4 System Administration

System administration will be managed by two different functions: database administrator (DBA) and system administrator (SA). The database administrator is responsible for maintaining the integrity of the data records contained within the WRAP 1 DMS. The system administrator is responsible for maintenance of the software system, communications, and hardware.

5.2 SYSTEM NAVIGATION

The WRAP 1 DMS online system navigation will be provided through the use of Oracle Forms 4.0 menus and the use of the fast access feature described in Section 4.3.1.

Screens encompass all required preprogrammed and preformatted screens. All screen functions are assuming that all the data placed into databases in any input function is available for the screens. The specific data elements and parameters are specified in the Inputs Section of the individual screens (see Appendix A). The screen interface diagram is provided in Figure 5-1.

5.2.1 WRAP 1 DMS System Screen - WRAP 1 DMS User Menu

The function of this menu is to allow the user to identify the general task to be performed. Selection of a task will bring up subordinate menus or screens prompting the user for the data required to perform the task. The selections available from this menu include:

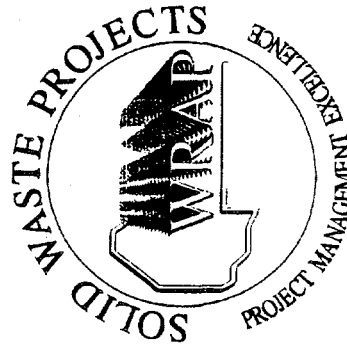
- Receiving
- NDE/NDA Operations
- Process (Glovebox) Operations
- Table Maintenance
- Sample Management
- Shipping
- System Administration
- Reports
- Pick List
- Facility Metrics and Inventories
- Process Data Review.

5.2.2 Receiving Screens

The screens described in this section are utilized by the Receiving function.

5.2.2.1 Container Receiving (DMSS0101). The function of this screen is to allow the user to identify the empty drums, waste drums, or waste boxes (SWBs) in a shipment and accept them into the facility. Acceptance of the containers includes the following operations, the completion of which can be displayed on the same screen as a set of messages or check marks:

- Logging the containers into the facility for comparison to the shipping papers.
- Updating the SWITS database as to the location of the containers. This includes SWITS confirmation that the update was successful.
- Creating records on the WRAP 1 DMS for the received containers.
- Downloading the existing certification on the containers from SWITS into the newly created records.
- Flagging containers not on a processing pick list.
- Updating the curie inventory of the facility.



WRAP 1 DMS
Screens Interface Diagram

3/14/95

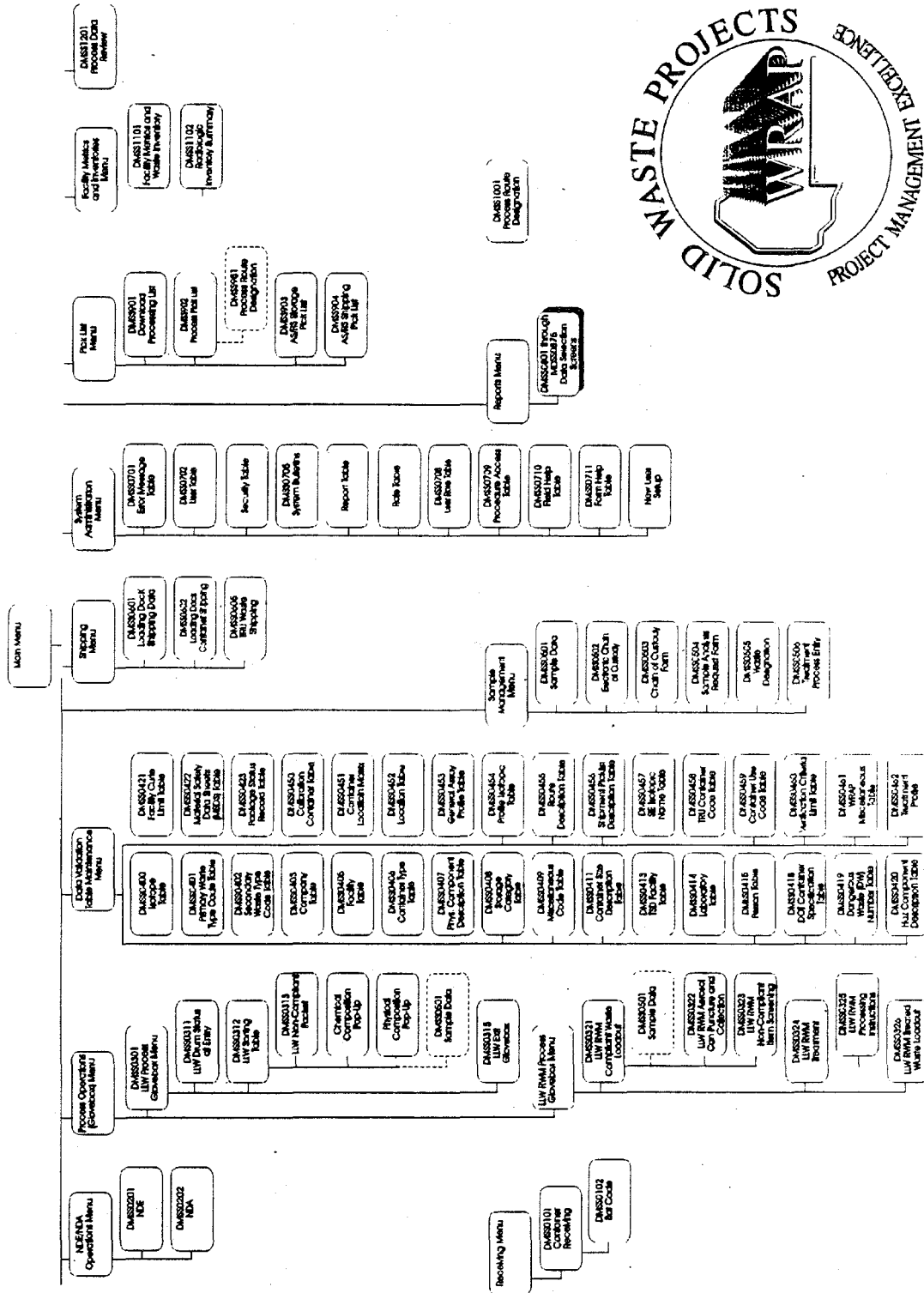


Figure 5-1. WRAP 1 DMS Screens Interface Diagram.

This screen is generated upon selection of "Container Receiving" from the "WRAP 1 DMS User Menu" screen.

5.2.2.2 Bar Code Package ID Labels (DMSS0102). This screen is generated upon selection of "Bar Code Package ID Labels" from the Container Receiving Screen. The function of this screen is to allow the user to produce a bar code label to replace a missing or damaged one. This function would normally be performed upon receipt of a container but should be available anytime in case a label is damaged within WRAP 1.

5.2.3 NDE/NDA Operations Screens

The screens described in this section are utilized by the NDE/NDA Operations function.

5.2.3.1 NDE (DMSS0201). The function of this screen is to allow the user to retrieve existing NDE information about the drum or box for verification as well as to add data discovered during the WRAP 1 NDE to the database. This screen is generated upon selection of "NDE" from the "WRAP 1 DMS User Menu" screen.

5.2.3.2 NDA (DMSS0202). The function of this screen is to allow the user to retrieve existing NDA information about the drum or box for verification, as well as to generate certification data as required to properly characterize the containers. This screen is generated upon selection of "NDA" from the "WRAP 1 DMS User Menu" screen.

5.2.4 Process Operations Screens

The screens described in this section are utilized by the Process Operations function.

5.2.4.1 Glovebox Operations Menu. The function of this screen is to allow the user to select the glovebox at which operations are to be performed. The selections available from this menu include:

- LLW Process Glovebox
- LLW RWM Process Glovebox
- TRU Process Glovebox
- TRU RWM Process Glovebox.

This screen is generated upon selection of "Glovebox Operations" from the "WRAP 1 DMS User Menu" screen.

5.2.4.2 LLW Process Glovebox Menu (DMSS0301). The function of this screen is to allow the user to select the area of the LLW process glovebox at which operations are to be performed. The selections available from this menu include:

- LLW Glovebox Status at Entry
- LLW Sorting Table
- LLW Exit Glovebox

5.2.4.3 LLW Glovebox Drum Status at Entry (DMSS0311). The function of this screen is to display the PIN of the inner drum, if any, for verification and to notify the operator whether sorting is required. The sorting display is based on whether or not the drum is compliant and whether sampling is required.

5.2.4.4 LLW Sorting Table (DMSS0312). The function of this screen is to provide the user with the information from the drum necessary for separating the compliant waste from the non-compliant waste, and to select other displays for sampling and for modification of the waste inventory. This screen will allow the user to select four subordinate screens: LLW Non-Compliant Packet screen; sample screen; chemical composition screen; and physical composition screen. There is also a pop up display for viewing the NDE results.

5.2.4.5 LLW Non-Compliant Packet (DMSS0313). The function of this screen is to display the PIN of the parent drum, the PIN of the transfer drum, and the PIN of the newly created packet. This screen also allows the user to enter a waste description and a WRAP grouping code for the packet.

5.2.4.6 LLW Sample Data (DMSS0314). The function of this screen is to display the sample ID and to allow the user to enter information for the sample.

5.2.4.7 LLW Physical Composition (DMSS0316). The function of this screen is to display and allow the user to modify the physical composition for the drum being sorted.

5.2.4.8 LLW Chemical Composition (DMSS0317). The function of this screen is to display and allow the user to modify the chemical composition for the drum being sorted. Since the user cannot observe chemical concentrations, the user can change volume percents and delete chemical records only. If all chemical records are deleted, then the waste is no longer non-compliant.

5.2.4.9 LLW Exit Glovebox (DMSS0315). The function of this screen is for use in filling the product drum with pucks or uncompacted drums. The user is allowed to modify the outer drum waste description, dose rate, seal number, and void code. This screen also displays information for up to six pucks. The information displayed for each puck include puck PIN, PIN of drum before it was crushed, puck height, and puck weight. The puck height displayed is a default system setup parameter, and is the only field for the puck that is user modifiable.

5.2.4.10 LLW RWM Process Glovebox Menu. The function of this screen is to allow the user to select the area of the LLW RWM Process Glovebox at which operations are to be performed. The selections available from this menu include:

- LLW RWM Compliant Waste Load Out
- LLW RWM Aerosol Can Treatment
- LLW RWM Non-Compliant Item Screening
- LLW RWM Treatment
- LLW RWM Treated Waste Loadout.

This screen is generated upon selection of "LLW RWM Process Glovebox" from the "Glovebox Operations Menu" screen.

5.2.4.11 LLW RWM Compliant Waste Loadout (DMSS0321). This screen shows the PIN and contents inventory for the LLW RWM transfer drum currently connected to the transfer port. This screen lists the PINs of the packets contained in the transfer drum as well as a waste category, if one has been assigned, to facilitate waste segregation in the storage carousel. The screen allows the user to input new information and comments to describe the items placed in or removed from the drum.

This screen is used when the packets are opened and the packet contents are sorted into compliant and non-compliant items. The screen allows the user to identify non-compliant items from a packet using new bar codes. The compliant items are identified by the packet bar code, described in greater detail if necessary, and placed in a product drum which is also identified. This screen is generated upon selection of "LLW RWM Compliant Waste Load Out" from the "LLW RWM Process Glovebox" screen.

5.2.4.12 LLW RWM Aerosol Can Puncture and Collection (DMSS0322). The function of this screen is to allow the user to separate the compliant aerosol can from its non-compliant contents. The non-compliant (non-punctured) aerosol can is rendered compliant by the puncturing process and needs no new bar code label to be deposited in the compliant waste drum. This screen allows the user to update the contents inventory of the compliant waste drum to reflect the addition of an aerosol can. The contents of the can are drained into a collection container which is identified by a bar code label. This screen is generated upon selection of "LLW RWM Aerosol Can Puncture and Collection" from the "LLW RWM Compliant Waste Load Out" screen.

5.2.4.13 LLW RWM Non-Compliant Item Screening (DMSS0323). The function of this screen is to allow the user to perform preliminary screening of non-compliant waste to facilitate storage of the waste in a compatible manner in the RWM storage carousel. This screening will consist of pH testing of liquids as well as other yet to be identified methods of obtaining a simple type of waste designation. This screen is generated upon selection of "LLW RWM Non-compliant Item Screening" from the "LLW RWM Compliant Waste Load Out" screen.

5.2.4.14 LLW RWM Treatment (DMSS0324). The function of this screen is to allow the user to perform waste treatment operations according to a set of treatment instructions developed by the facility chemist specifically for a given set of non-compliant waste items. The treatment instructions will contain a list of items to be treated together along with specific instructions on how the treatment should be carried out. The treatment instructions are assigned a waste treatment number after sufficient sample results are received to fully characterize the waste. The treatment number will be unique to the waste and treatment instructions and can be used to retrieve the treatment instructions to this screen. This screen will allow the user to input information concerning the progress of the treatment including retrieval of the transfer drums from the storage carousel, addition of items to the treatment container, and treatment results. This screen is generated upon selection of "LLW RWM Treatment" from the "LLW RWM Process Glovebox Menu" screen.

5.2.4.15 LLW RWM Processing Instructions (DMSS0325). The function of this screen is to display a set of treatment instructions developed by the facility chemist specifically for a given set of non-compliant waste items on the LLW RWM Glovebox Monitor. The treatment instructions will contain a list of items to be treated together along with specific instructions on how the treatment should be carried out. The treatment instructions are assigned a waste treatment number after sufficient sample results are received to fully characterize the waste. The treatment number will be unique to the waste and treatment instructions and can be used to retrieve the treatment instructions to this screen. This screen is generated upon selection of "LLW RWM Processing Instructions" from the "LLW RWM Treatment" screen.

5.2.4.16 LLW RWM Treated Waste Loadout (DMSS0326). The purpose of this screen is to allow the user to fill the treated waste product drum with waste as treatments are completed. The user requests the WRAP 1 DMS to combine the contents inventory for the treated items added to the drum. The user can then review and update the information to insure that the contents are adequately reflected. This screen is generated upon selection of "LLW RWM Treated Waste Loadout" from the "LLW RWM Process Glovebox Menu" screen.

5.2.4.17 TRU Process Glovebox Menu. The function of this screen is to allow the user to select the area of the TRU Process Glovebox at which operations are to be performed. The selections available from this menu include:

- TRU Sorting Glovebox
- TRU Empty Drum Compactor.

This screen is generated upon selection of "TRU Process Glovebox" from the "Glovebox Operations Menu" screen.

5.2.4.18 TRU Sorting Glovebox. This screen shows the PIN of the drum on the sorting table and the contents inventory for that PIN. It also allows the user to input modifications and comments based on the contents observed on the sorting table. The user will add each of the compliant items to the contents inventory of one of the TRU product drums. When a product drum is full, the user will install a lid and place a drum seal on the lid and record this seal number on the screen. This screen is generated upon selection of "TRU Sorting Glovebox" from the "TRU Process Glovebox" screen.

5.2.4.19 TRU Non-compliant Packet. This screen shows the Packet PIN, the drum PIN from which the packet came, and the transfer drum PIN into which the packet went along with the user description of the contents of the packet. This screen also allows the user to perform a packet assay on a packet and calculate the Pu-239 Fissile Gram Equivalent (FGE). This screen is generated upon selection of "TRU Non-compliant Packet" from the "TRU Sorting Glovebox" screen.

5.2.4.20 TRU Empty Drum Compactor. This screen provides the capability to input information from the compaction and puck storage operations. The user compacts a puck, compares the puck weight to the limits and visually verifies that it will fit in loadout drum. If it does, then the puck PIN is added to the loadout drum contents inventory. When the loadout drum is full, then the lid is replaced and the drum is replaced with an empty one. This screen is generated upon selection of "TRU Empty Drum Compactor" from the "TRU Process Glovebox Menu" screen.

5.2.4.21 TRU RWM Process Glovebox Menu. The function of this screen is to allow the user to select the area of the TRU RWM Process Glovebox at which operations are to be performed. The selections available from this menu include:

- TRU RWM Compliant Waste Load Out
- TRU RWM Aerosol Can Treatment
- TRU RWM Non-compliant Item Screening
- TRU RWM Treatment
- TRU RWM Treated Waste Loadout.

This screen is generated upon selection of "TRU RWM Process Glovebox" from the "Glovebox Operations Menu" screen.

5.2.4.22 TRU RWM Compliant Waste Load Out. This screen shows the PIN and contents inventory for the TRU RWM transfer drum currently connected to the transfer port. This screen lists the PINs of the packets contained in the transfer drum as well as a waste category, if one has been assigned, to facilitate waste segregation in the storage carousel. The screen allows the user to input new information and comments to describe the items placed in or removed from the drum. This screen is generated upon selection of "TRU RWM Compliant Waste Load Out" from the "TRU RWM Process Glovebox" screen.

5.2.4.23 TRU RWM Aerosol Can Puncture and Collection. The function of this screen is to allow the user to separate the compliant aerosol can from its non-compliant contents. The non-compliant (non-punctured) aerosol can is rendered compliant by the puncturing process and needs no new bar code label to be deposited in the compliant waste drum. This screen allows the user to update the contents inventory of the compliant waste drum to reflect the addition of an aerosol can. The contents of the can are drained into a collection container which is identified by a bar code label. This screen is generated upon selection of "TRU RWM Aerosol Can Puncture and Collection" from the "TRU RWM Compliant Waste Load Out" screen.

5.2.4.24 TRU RWM Non-compliant Item Screening. The function of this screen is to allow the user to perform preliminary screening of non-compliant waste to facilitate storage of the waste in a compatible manner in the RWM storage

carousel. This screening will consist of pH testing of liquids as well as other yet to be identified methods of obtaining a simple type of waste designation. This screen is generated upon selection of "TRU RWM Non-compliant Item Screening" from the "TRU RWM Compliant Waste Load Out" screen.

5.2.4.25 TRU RWM Treatment. The function of this screen is to allow the user to perform waste treatment operations according to a set of treatment instructions developed by the facility chemist specifically for a given set of non-compliant waste items. The treatment instructions will contain a list of items to be treated together along with specific instructions on how the treatment should be carried out. The treatment instructions are assigned a waste treatment number after sufficient sample results are received to fully characterize the waste. The treatment number will be unique to the waste and treatment instructions and can be used retrieve the treatment instructions to this screen.

This screen will allow the user to input information concerning the progress of the treatment including retrieval of the transfer drums from the storage carousel, addition of items to the treatment container, and treatment results. This screen is generated upon selection of "TRU RWM Treatment" from the "TRU RWM Process Glovebox Menu" screen.

5.2.4.26 TRU RWM Processing Instructions. The function of this screen is to display a set of treatment instructions developed by the facility chemist specifically for a given set of non-compliant waste items on the TRU RWM Glovebox Monitor. The treatment instructions will contain a list of items to be treated together along with specific instructions on how the treatment should be carried out. The treatment instructions are assigned a waste treatment number after sufficient sample results are received to fully characterize the waste. The treatment number will be unique to the waste and treatment instructions and can be used retrieve the treatment instructions to this screen. This screen is generated upon selection of "TRU RWM Processing Instructions" from the "TRU RWM Treatment" screen.

5.2.4.27 TRU RWM Treated Waste Load Out. The purpose of this screen is to allow the user to fill the treated waste product drum with waste as treatments are completed. The user requests the WRAP 1 DMS to combine the contents inventory for the treated items added to the drum. The user can then review and update the information to insure that the contents are adequately reflected. This screen is generated upon selection of "TRU RWM Treated Waste Load Out" from the "TRU RWM Process Glovebox Menu" screen.

5.2.5 Data Validation Table Maintenance Screens

The screens described in this section are utilized by the Data Validation Table Maintenance function.

5.2.5.1 Isotope Table (DMSS0400). This screen is used to maintain the data relating to radioactive solid waste isotopes. The Isotope Table contains information including isotope number, name, unit, factors and classes.

5.2.5.2 Primary Waste Type Table (DMSS0401). The Primary Waste Type Table encompasses the primary waste type codes and their description. This table is maintained through screen DMSS0401.

5.2.5.3 Secondary Waste Type Code Table (DMSS0402). The Secondary Waste Type Table encompasses the secondary waste type codes and their description. Screen DMSS0402 is used to maintain this table.

5.2.5.4 Company Table (DMSS0403). Screen DMSS0403 is used to maintain the table containing information about companies that generate, transport, and dispose of solid waste.

5.2.5.5 Facility Table (DMSS0405). Screen DMSS0405 is used maintain the Facility Table. The table consists of the facility area location, identification, name of the location, and Machine Readable Code used for barcode identifier.

5.2.5.6 Physical Component Description Table (DMSS0407). The DMSS407 screen is used to maintain the Physical Component Description table. This table contains a thirty-character description of a container's physical contents and a list of values flag. These are the only data elements in this table.

5.2.5.7 Storage Category Table (DMSS0408). The Storage Category Table is maintained by update screen DMSS0408. It maintains the storage category code and the storage category.

5.2.5.8 Miscellaneous Code Table (DMSS0409). This screen maintains a table of miscellaneous codes used in the SWITS system (the CODECHECK table). This table includes SWITS data codes for which there are few valid values and no additional data.

5.2.5.9 Container Size Table (DMSS0411). The Container Size Table is maintained by update screen DMSS0411. It maintains a listing of valid container size descriptions and container volumes.

5.2.5.10 TSD Facility Table (DMSS0413). The DMSS0413 screen is used to maintain the TSD Facility table. This table contains information about TSD facilities, including address, phone number, contacts, and class.

5.2.5.11 Laboratory Table (DMSS0414). Screen DMSS0414 is used to maintain the Laboratory table. This table consists of laboratory names and ID numbers.

5.2.5.12 Person Table (SWIU415). Screen DMSS0415 is used to maintain the Person Table with information required to identify individuals that are entered into SWITS.

5.2.5.13 DOT Container Specification Table (DMSS0418). Screen DMSS0418 is used to maintain the DOT Container Specification table.

5.2.5.14 Dangerous Waste Number Table (DMSS0419) Screen DMSS0419 is used to maintain the Dangerous Waste Number Table.

- 5.2.5.15 **Hazardous Chemical Component Table (DMSS0420).** Screen DMSS0420 is used to maintain the Hazardous Chemical Component table.
- 5.2.5.16 **Facility Curie Limit Table (DMSS0421).** Table SWIU421 (?) maintains the plutonium equivalent curie count (PE-Ci) limits for relevant Hanford Site facilities.
- 5.2.5.17 **Material Safety Data Sheet Table (DMSS0422).** Screen DMSS0422 is used to maintain the Material Safety Data Sheet (MSDS) table.
- 5.2.5.18 **Package Status Table (DMSS0423).** Screen DMSS0423 is used to maintain the Package Status table.
- 5.2.5.19 **Calibration Container Table (DMSS0450).** Screen DMSS0450 is used to maintain the Calibration Container table.
- 5.2.5.20 **Container Location Matrix (DMSS0451).** Screen DMSS0451 is used to maintain the Container Location table.
- 5.2.5.21 **Location Table (DMSS0452).** Screen DMSS0452 is used to maintain the Location table.
- 5.2.5.22 **General Assay Profile Table (DMSS0453).** Screen DMSS0453 is used to maintain the Assay Profile table.
- 5.2.5.23 **Profile Isotope Table (DMSS0454).** Screen DMSS0454 is used to maintain the Profile Isotope table.
- 5.2.5.24 **Route Description Table (DMSS0455).** Screen DMSS0455 is used to maintain the Route Description table.
- 5.2.5.25 **Shipment Picklist Description Table (DMSS0456).** Screen DMSS0456 is used to maintain the Shipment Picklist Description table.
- 5.2.5.26 **SIE Isotopic Name Table (DMSS0457).** Screen DMSS0457 is used to maintain the SIE Isotopic Name table.
- 5.2.5.27 **TRU Container Code Table (DMSS0458).** Screen DMSS0458 is used to maintain the TRU Container Code table.
- 5.2.5.28 **Container Use Code Table (DMSS0459).** Screen DMSS0459 is used to maintain the Container Use Code table.
- 5.2.5.29 **Verification Criteria Limit Table (DMSS0460).** Screen DMSS0460 is used to maintain the Verification Criteria Limit table.
- 5.2.5.30 **WRAP Miscellaneous Table (DMSS0461).** Screen DMSS0461 is used to maintain the WRAP Miscellaneous table.
- 5.2.5.31 **Treatment Profile Table (DMSS0462).** Screen DMSS0462 is used to maintain the Treatment Profile table.

5.2.6 Sample Management Screens

The screens described in this section are utilized by the Sample Operations function.

5.2.6.1 Sample Management Menu. The function of this screen is to allow the user to select the sample management activity to be performed. The selections available from this menu include:

- Sample Data
- Electronic Chain of Custody
- Chain of Custody
- Sample Analysis Request
- Waste Designation
- Treatment Process Entry.

This screen is generated upon selection of "Sample Management" from the "WRAP 1 DMS User Menu" screen.

5.2.6.2 Sample Data (DMSS0501). This screen allows the user to obtain a sample and document the relevant chain of custody data such as sampler, source of the sample, purge port into which the sample was placed, date and time of sampling, etc. This screen is generated upon selection of "Sample Data" from any of the following screens:

- Sample Management Menu
- LLW Sorting Table
- LLW RWM Non-Compliant Item Screening
- LL RWM Aerosol Can Treatment
- TRU Sorting Glovebox
- TRU RWM Non-Compliant Item Screening
- TRU RWM Aerosol Can Treatment.

5.2.6.3 Electronic Chain of Custody (DMSS0502). This screen allow the user to update the electronic chain of custody form as custody of a sample, purge port, or sample pig is transferred from one user to another. This record will be maintained for the life of the sample from the time it is obtained to the time it is disposed of. The lab will be treated as a single custodian for the purpose of the WRAP 1 facility tracking since they will maintain their own internal tracking system. This screen is generated upon selection of "Electronic Chain of Custody" from the "Sample Management Menu" screen.

5.2.6.4 Chain of Custody (DMSS0503). This screen will allow the user to complete and review the Chain of Custody data. This screen is generated upon selection of "Chain of Custody" from the "Sample Management Menu" screen.

5.2.6.5 Sample Analysis Request (DMSS0504). This screen will allow the user to identify the sample analyses that are required for each sample in the transfer pig. This screen is generated upon selection of "Sample Analysis Request" from the "Sample Management Menu" screen.

5.2.6.6 Waste Designation (DMSS0505). This screen will allow the user to update the applicable waste descriptions and designation codes in the WRAP 1 DMS database according to the results of the sample analyses. This screen is

generated upon selection of "Waste Designation" from the "Sample Management Menu" screen.

5.2.6.7 Treatment Process Entry (DMSS0506). This screen will allow the user to specify treatment instructions and identify them with a treatment process number. The instructions will be developed by the facility chemist based on the results of sample analyses for the parent items. This screen is generated upon selection of "Treatment Process Entry" from the "Sample Management Menu" screen.

5.2.7 Shipping Screens

The screens described in this section are utilized by the Shipping function.

5.2.7.1 Shipping Menu. The function of this screen is to allow the user to select the shipping activity to be performed. The selections available from this menu include:

- Loading Dock Shipping Data
- Loading Dock Container Shipping
- TRUPACT Shipping Data
- TRUPACT Payload Assembly
- TRUPACT Assembly Loading
- TRU Waste Shipping.

This screen is generated upon selection of "Shipping" from the "WRAP 1 DMS User Menu" screen.

5.2.7.2 Loading Dock Shipping Data (DMSS0601). The function of this screen is to generate the shipping papers and documentation required to send a shipment of empty drums, waste drums, or waste boxes out of the facility through the loading dock. The PINs for which data is recalled or entered will be found on a pick list based on the shipping schedule. The screen will prompt the user for any additional data required to complete the appropriate shipping forms. The user will be allowed to reroute drums back through the process to collect missing data. The forms to be completed and printed from this screen include:

- Uniform Hazardous Waste Manifest (UHM)
- Radioactive Shipment Record (RSR)
- Empty Drum Transfer Papers
- Solid Waste Storage Disposal Record (SWSDR).

This screen is generated upon selection of "Loading Dock Shipping Data" from the "Shipping Menu" screen.

5.2.7.3 Loading Dock Container Shipping (DMSS0602). The function of this screen is to allow the user assemble a set of containers for shipment out of the WRAP 1 facility through the loading dock. This screen will display a list of PINs scheduled for shipment and allow the user to perform and check off the following items and activities required to ship those containers:

- Retrieve the containers from storage to the loading dock.
- Scan the containers and compare them to the shipping schedule and prepared paperwork.
- Update container location.
- Authorize shipment.
- Update SWITS.

This screen is generated upon selection of "Loading Dock Container Shipping" from the "Shipping Menu" screen.

5.2.7.4 TRUPACT Payload Assembly. The function of this screen is to allow the user to assemble a set of drums or boxes into a TRUPACT payload according to a predetermined pick list and payload assembly ID number. This screen will display a set of drums or boxes according to their position to be placed in the TRUPACT (top or bottom) and allow the user to check them off as they are scanned and assembled at the shrink wrap stand. The screen will also allow the user to verify and confirm the load and print an assembly report. This screen is generated upon selection of "TRUPACT Payload Assembly" from the "Shipping Menu" screen.

5.2.7.5 TRUPACT Cask Loading. The function of this screen is to allow the user load the assembled 14 pack of TRU drums or 2 TRU SWBs into a particular TRUPACT II shipping cask. This screen is generated upon selection of "TRUPACT Cask Loading" from the "Shipping Menu" screen.

5.2.7.6 TRU Waste Shipping (DMSS0605). The function of this screen is to allow the user to complete the shipping papers required to send a shipment of TRU waste containers to the Waste Isolation Pilot Plan (WIPP). This screen will display a list of PINs scheduled for shipment and allow the user to perform and check off the following items and activities required to ship those containers:

- Generate the shipping reports.
- Update container location.
- Authorize shipment.
- Update SWITS.
- Send the shipping message to WIPP.

This screen is generated upon selection of "TRU Waste Shipping" from the "Shipping Menu" screen.

5.2.8 System Administration Tables

These screens are used to maintain the WRAP 1 DMS Administration Tables. These tables are used to maintain the error messages, system status, users,

procedures, reports, security, and system bulletins. All of these tables are accessed through the System Administration menu.

5.2.8.1 Error Message Table (DMSS0701). This screen is used to maintain the Error Message Table.

5.2.8.2 User Table (DMSS0702). This screen is used to maintain the User Table with information required for a functional user to log on to the WRAP 1 DMS.

5.2.8.3 Security Table. This screen is used to maintain the Security table which consists of user identification, privileges, and tables.

5.2.8.4 System Bulletin (DMSS0705). This screen is used to maintain the System Bulletins table which consists of textual information and a date.

5.2.8.5 Report Table. This screen is used to maintain the Report table.

5.2.8.6 Role Table. This screen is used to maintain the Role table.

5.2.8.7 User Role Table (DMSS0708). This screen is used to maintain the User Role table.

5.2.8.8 Procedure Access Table (DMSS0709). This screen is used to maintain the Procedure Access table.

5.2.8.9 Field Help Table (DMSS0710). This screen is used to maintain the Field Help Table. This table consists of the table name, field name, data type, and description.

5.2.8.10 Form Help Table (DMSS0711). This screen is used to maintain the Form Help Table. The table consists of the form name and description.

5.2.8.11 New User Setup (DMSS0712). This screen is used to set up new users, except for grants. It displays all or part of the USERS, PERSON, and USERROLE tables.

5.2.9 Report Screens

The screens described in this section support the Reports function. In addition, WRAP 1 DMS reports are available from applicable screens in the modules these reports support.

5.2.9.1 Reports Menu. The function of this screen is to allow the user to directly request any WRAP 1 DMS report.

5.2.9.2 Data Selection Screens. These screens allow the user to input data selection parameters to control the data included in each report requested.

5.2.10 Process Routing and Pick Lists Screens

The screens described in this section are utilized by the Process Routing and Pick Lists function.

5.2.10.1 Pick List Menu. The function of this screen is to allow the user to select the pick list management activity to be performed. The selections available from this menu include:

- Download Processing List
- Process Pick List
- AS/RS Storage Pick List
- AS/RS Shipping Pick List
- TRUPACT Assembly Pick List.

This screen is generated upon selection of "Pick Lists" from the "WRAP 1 DMS User Menu" screen.

5.2.10.2 Download Processing List (DMSS0901). The function of this screen is to allow the user to enter a processing list and add the processing list to the current process pick list. The user will enter container package ID, route code, sample flag, compliant flag, and profile ID. This screen is generated upon selection of "Download Processing List" from the "Pick List Menu" screen.

5.2.10.3 Process Pick List (DMSS0902). The function of this screen is to allow the user to transfer processing pick lists from the WRAP 1 DMS to the PCS for incorporation into the PCS processing pick list as facility equipment becomes available. The user will have the ability to reorder the list according to the changing needs of the facility. This screen is generated upon selection of "Process Pick List" from the "Pick List Menu" screen.

5.2.10.4 AS/RS Storage Pick List (DMSS0903). The function of this screen is to allow the user to store a drum in the AS/RS. Storage can occur from either the transfer car or the pallet stand and these are menu selections upon generating this screen.

Storage from the transfer car will occur when a drum reaches the end of the discharge conveyor. This screen will display the waste characteristics of the drum PIN on the discharge conveyor and a list of drums with similar characteristics on partially filled pallets in the AS/RS. The user will then select a PIN on partially filled pallet on which to place the discharged drum. This PIN is placed on the AS/RS retrieval via transfer car pick list and the pallet containing that PIN is retrieved. The drum is transferred from the discharge conveyor to the pallet on the transfer car by a jib crane and the pallet is stored in the AS/RS. Drum location information in the WRAP 1 DMS is updated.

This screen is generated upon selection of "AS/RS Storage Pick List" from the "Pick List Menu" screen.

5.2.10.5 AS/RS Shipping Pick List Screen (DMSS0904). The function of this screen is to allow the user to group a set of drums into a shipment from the loading dock and assign a shipment ID# to the set. This screen provides the capability to ship drums from the WRAP 1 facility for any reason including Head Gas sampling and a LLW Burial. This list is uploaded to the PCS when all the necessary information for all drums in the shipment has been compiled and a truck has been scheduled to pick up the shipment. This screen is generated upon selection of "AS/RS Shipping Pick List" from the "Pick List Menu" screen.

5.2.10.6 TRUPACT Assembly Pick List. The function of this screen is to allow the user to establish a sequence for retrieval of the drums from the AS/RS via the transfer stand for TRUPACT Assembly.. This list is uploaded to the PCS when all the necessary information for all drums in the shipment has been compiled and a truck has been scheduled to pick up the shipment. The sequence of TRUPACT assemblies on the TRUPACT accumulation conveyor must match the sequence of TRUPACT II casks delivered for loading. This screen is generated upon selection of "TRUPACT Assembly Pick List" from the "Pick List Menu" screen.

5.2.11 Process Route Designation Screen (DMSS1001)

This screen is utilized by the Process Routing module. The function of this screen is to be defined by the user during system construction.

5.2.12 Facility Metrics and Inventories Screens

The screens described in this section support the Facility Metrics and Inventories function.

5.2.12.1 Facility Metrics and Waste Inventory (DMSS1101). The function of this screen is to be defined by the user during system construction.

5.2.12.2 Radiologic Inventory Summary (DMSS1102). The function of this screen is to allow the user to display the current radiologic inventory for the entire Facility, the TRU glovebox, and the RWM glovebox along with the limits associated with each area. This screen is generated upon selection of "Radiologic Inventory Summary" from the "Facility Metrics and Inventories Menu" screen.

5.2.13 Process Data Review Screen (DMSS1201)

This screen is utilized by the User Review/Modification of WRAP 1 Waste Processing Data module. The function of this screen is to allow the user to review the data for a container upon completion of processing to ensure that all data is complete and that the container is ready for shipping. This screen is generated upon selection of "Process Data Review" from the "WRAP 1 DMS User Menu" screen.

5.3 REPORTS

Reporting encompasses all required preprogrammed and preformatted WRAP 1 DMS reports. All reporting functions assume that all the data placed into databases in any input function is available at reporting time. The specific data elements and parameters are specified in the Inputs Section of the individual report or on the report samples (see Appendix B). The report interface diagram is provided in Figure 5-2.

5.3.1 Receiving Reports

The reports described in this section support the NDE and NDA functions.

5.3.1.1 Bar Code Package ID Labels (DMSR0120). This report prints package ID barcode labels to be placed on waste packages.

5.3.2 NDE/NDA Reports

The reports described in this section support the NDE and NDA functions.

5.3.2.1 Assay Profile Report (DMSR0220). The Assay Profile Report summarizes all the data listed for the various profiles used in the assay process. This includes profile number, waste form, radionuclides, and ratios.

5.3.3 Process Operations (Glovebox) Reports

The following reports pertain to the Process Operations (Glovebox) functions:

5.3.3.1 Transfer Drum Status Report (DMSR0321). This report presents information on the transfer drums and their status (i.e., transfer drum identification number, status - full, empty, partially full - inner container package identification numbers, date and time in storage, etc.

5.3.3.2 Aerosol Can Process Report (DMSR0322). This report lists the transfer drums and aerosol can identification numbers that are ready for processing. The report includes transfer drum identification numbers, aerosol can identification numbers, location, etc.

5.3.3.3 Treatment Report (DMSR0324). The Treatment Report provides a summary of the various treatments along with a listing of containers that will be treated together. The report includes package identification numbers, treatment number, description, etc.

5.3.4 Data Validation Table Maintenance Reports

The following reports pertain to the data validation table maintenance function:

WRAP 1 DMS Reports Interface Diagram

3/8/85

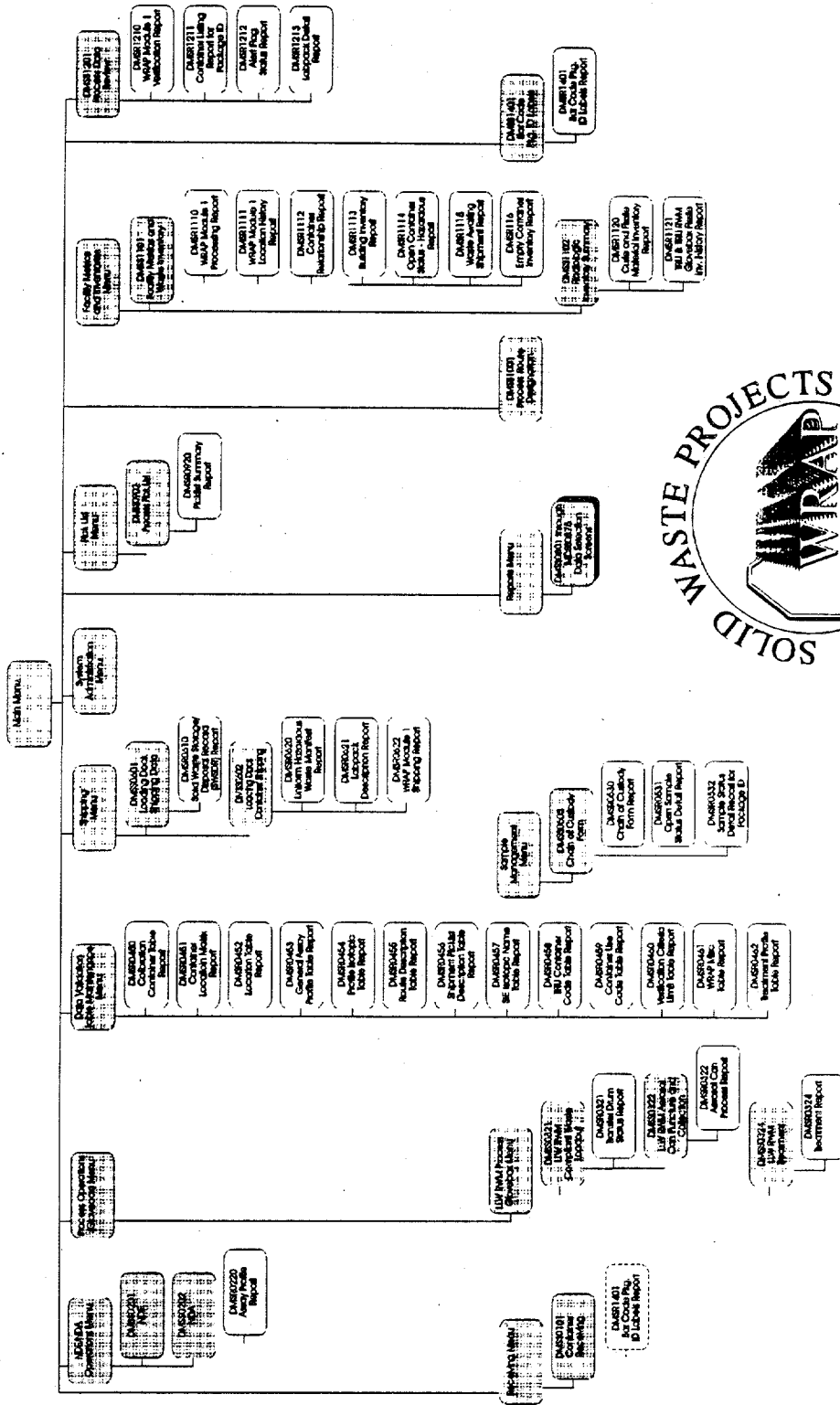


Figure 5-2. WRAP 1 DMS Reports Interface Diagram.

5.3.5 Sample Management Reports

The following reports pertain to Sample Management functions:

5.3.5.1 Chain of Custody Report (DMSR0530). The Chain of Custody Report provides a summary of all people who handled a sample container from the time the sample was taken to its final disposal. The summary includes sample identification number, name of person handling the sample, date and time of transfer, etc.

5.3.5.2 Open Sample Status Detail Report (DMSR0531). The Open Sample Status Detail Report (SWIR112) lists all open samples for the requesting generator group by package identification in ascending order. The sample information and related dates are given for each sample.

5.3.5.3 Sample Status Detail Report for Package ID (DMSR0532). The Sample Status Detail Report for Package ID (SWIR113) lists all samples for the requested package id. The sample information and related dates are given for each sample.

5.3.6 Shipping Reports

The reports described in this section provide documentation that the referenced waste has been certified for storage or disposal.

5.3.6.1 Solid Waste Storage/Disposal Record (SWSR) (DMSR0610). The SWSR report contains information necessary to complete the SWSR form for the storage or disposal of waste in the Central Waste Complex or the Low-Level Waste Burial Grounds meeting requirements of WHC-EP-0063, *Hanford Site Solid Waste Acceptance Criteria*.

5.3.6.2 Uniform Hazardous Waste Manifest (DMSR0620). The Uniform Hazardous Waste Manifest is comprised of the following reports:

- Uniform Hazardous Waste Manifest (onsite) - Page One (DMSR0620)
- Uniform Hazardous Waste Manifest (offsite) - Page One (DMSR0620a)
- Uniform Hazardous Waste Manifest - Onsite Continuation Sheets (DMSR0620b)
- Manifest Attachment Sheet (all except Offsite Manifest with PCBs) (DMSR0620c)
- Uniform Hazardous Waste Manifest - Offsite Continuation Sheets (DMSR0620d)
- Manifest Attachment Sheet (Offsite Manifest with PCBs) (DMSR0620e)

These reports present waste grouped by proper shipping name, hazard class, and DOT identification number to enable the shipment of waste. If the grouping of the waste results in less than five logical groupings, only DMSR0620 will be produced. Whenever the logical grouping of containers exceeds four logical groups, both the DMSR0620 and DMSR0620b reports will be produced for onsite shipments, and the DMSR0620a and DMSR0620d reports will be produced for offsite shipments. The logical grouping of containers will be referred to as line items on the manifest. A single-page manifest attachment

page is generated for each report. Offsite PCB shipment attachment pages are created by report DMSR0620e, and attachment pages for all other manifest types are created by DMSR0620c. The operator has the option of renumbering the manifest at run time or specifying the transporter's phone number.

5.3.6.3 Labpack Description Report (DMSR0621). The Labpack Description Report provides a detailed description of the labpack containers on a specific Offsite Uniform Hazardous Waste Manifest. This report will accompany the waste shipment to the offsite hazardous waste disposal contractor. The user enters the offsite manifest on which to be reported.

5.3.6.4 WRAP Module 1 Shipping Report (DMSR0622). This report summarizes the number of waste containers processed in WRAP Module 1 that were shipped to onsite LLW disposal, onsite mixed waste disposal, onsite storage, and offsite transuranic disposal for a given time period (weekly, monthly, quarterly, or annually). The list gives the subtotal of the number of containers for each waste type (primary and secondary) and an overall total shipped.

5.3.6.5 Transuranic Waste Disposal Record. (future report when WIPP criteria is finalized) The Transuranic Waste Disposal Record report will provide information necessary to complete the record for the disposal of waste in WIPP.

5.3.7 Picklist Reports

The reports described in this section support the Picklist module.

5.3.7.1 Picklist Summary Report (DMSR0920). The Picklist Summary Report provides a listing of all containers on the listing and their status in the plant. This includes package identification number, container status, storage category codes, route code, waste type, etc. The report can be specific to one or many container status codes or route codes.

5.3.8 Facility Metrics and Inventories Reports

The reports described in this section support the facility metrics, inventories, and radiologic inventory functions.

5.3.8.1 WRAP Module 1 Processing Report (DMSR1110). This report summarizes the number of containers received, processed, certified, verified, flagged as being out of compliance by waste type, and average ship time. The summary is keyed by primary and secondary waste type and provides a subtotal for each waste type and a total of all containers in each category for a given time period (weekly, monthly, quarterly, or annually). *Facility Metrics*

5.3.8.2 WRAP Module 1 Location History Report (DMSR1111). This report provides a summary of the location where each container was at and the date and time. Data reported includes container number, location, date and time.

5.3.8.3 Container Relationship Report (DMSR1112). This report summarizes the relationship of various containers processed through WRAP Module 1 and

repackaged. This includes the relationship of inner containers (packet, parent item, collection container) to the original drum the item was removed from, treatment container, and the ultimate product drum the waste was packaged in, etc.

5.3.8.4 Building Inventory Report (DMSR1113). The Building Inventory Report details building inventory by container, size, type, description, and location. The user enters the package ID or unit on which the report is to be prepared.

5.3.8.5 Open Container Status - Hazardous (DMSR1114). The Open Container Status - Hazardous report provides detailed information about each hazardous waste container under control of the requesting generator group.

5.3.8.6 Waste Awaiting Shipment Report (DMSR1115). The Waste Awaiting Shipment Report lists unshipped containers under generator control which have an accumulation date, grouped by Waste Type.

5.3.8.7 Empty Container Inventory Report (DMSR1116). The Empty Container Inventory Report provides an inventory of empty or used-empty containers under generator control.

5.3.8.8 Curie and Fissile Material Inventory Report (DMSR1120). This report shows the current curie loading for the facility and fissile loading for the TRU glovebox, and TRU RWM glovebox.

5.3.8.9 TRU and TRU RWM Glovebox Fissile Inventory History Report (DMSR1121). This report presents in stepwise fashion the fissile inventory history for both the TRU glovebox and the TRU RWM glovebox. At each step, it shows the amount of fissile material added or subtracted and the new total.

5.3.9 Process Data Review Reports

The reports described in this section support the Process Data Review module.

5.3.9.1 WRAP Module 1 Verification Report (DMSR1210). This report summarizes the number of containers received in WRAP Module 1 that were found to be inconsistent with the generator certification data for a given time period (weekly, monthly, quarterly, or annually). Data listed includes container identification number, generator name, date that a data element was flagged to be out of compliance, specific data element that was determined to be out of compliance, and action taken to bring the container into compliance such as correcting the data element in error, returning the container to the generator to correct, sending the container to storage pending correction in another processing facility, or repackaging in WRAP Module 1.

5.3.9.2 Container Listing Report for Package ID (DMSR1211). The Container Listing Report for Package ID produces a complete list of all the data elements pertaining to an individual CON_PKG_ID.

5.3.9.3 Alert Flag Status Report for Package ID (DMSR1212). This report lists the information from the ALERT table.

5.3.9.4 LabPack Detail Report (DMSR1213). The Labpack Detail Report (SWIR115) displays details concerning the contents of a labpacked container. The general labpack waste description is provided, along with a list of the individual package IDs and their waste descriptions.

5.3.10 TRUPACT Reports

The reports described in this section support the TRUPACT Shipping module.

5.3.10.1 TRUPACT Box Assembly Report. This report lists the PINs of the two boxes that will make up the TRUPACT payload assembly and the assembly number. Provide spaces to write in the Shipment number, Cask number, and Lid numbers.

5.3.10.2 TRUPACT Loading Report. This report lists the 14 drum PINs that will make up the TRUPACT payload assembly and the assembly number. Provide spaces to write in the Shipment number, Cask number, and Lid numbers.

5.3.10.3 TRUPACT II Payload Assembly Report. This report lists data collected during the assembly of the TRUPACT II cask. Information includes TRUPACT II identification number, lid and body number, assembly number, dose rate of the loaded TRUPACT II, cask closure date, etc.

5.4 DATA DETAIL DESIGN

The design details for each object are incorporated into the Data Dictionary (Appendix C) and the object model diagrams (Appendices D-G).

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6.1 Trademarks

1. Oracle is a trademark of Oracle Corporation, World Headquarters, 500 Oracle Parkway, Redwood Shores, CA 94063

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APPENDIX A
SCREEN DESIGN DETAILS

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DMSS0311 - LLW Sorting Glovebox

03/18/1995 11:24:11

Cancel Exit

Refresh Query

< >

ADD

Refresh Query

<< >>

DELETE

Pkg Id Sample? Compliant?

Refresh Query

LLW Sorting Table

Refresh Query

Submit

LLW Non-Compliant Packet

INNER DRUM PACKAGE ID

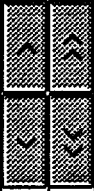
DONE

CANCEL

DRAFT

03/11/1995 09:38:33

Form



Request Process List
Download

Report

Process List Received

Add to Current List

Add to List

DRAFT

Pkg Id	Location	Rte	Pallet Num

03/11/1995 10:56:20

Shipment #:

AS/RS Shipping Pick List

Bin #	Pkg Id	Ship Cat	Bin #	Package Ids	Ship Cat

Group:

Bin # Package Ids Ship Cat

DRAFT

03/11/1995 08:17:46

Summit

Exit

<

>

Print

Fissile Inventory

Area	Rad Total	Units	Alarm	Alarm Limit

DRAFT

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APPENDIX B
REPORT DESIGN DETAILS

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B.0 REPORT DESIGN DETAILS

Report design details have not yet been defined. This appendix will be provided with Rev. 1 of the WRAP 1 DMS SDD.

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APPENDIX C
DATA DICTIONARY

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CONTENTS

C.0	DATA DICTIONARY	C-1
C.1	DATA ELEMENT LIST	C-1
	C.1.1 Data Record Tables	C-1
	C.1.2 Data Look-Up Tables	C-14
C.2	DMS DATA ELEMENT DESCRIPTIONS	C-21
	C.2.1 Data Record Tables Element Descriptions	C-21
	C.2.2 Data Look-Up Tables Element Descriptions	C-93

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C.0 DATA DICTIONARY

The Data Dictionary describes the data elements that make up the DMS database. The data elements are grouped into records of related data. In the front of a data name, an [*] indicates a unique key for the record in which the data element occurs and a [.] indicates a foreign key to which the data element refers.

Section C.1 lists the data elements included in each data record and provides the name and size for each data element. Section C.2 contains definitions of each of the data elements.

C.1 DATA ELEMENT LIST

Section C.1.1 lists SWITS data records and data elements that appear appropriate for use in the DMS database along with those SWITS data records that have added DMS data elements and new DMS data records. The data records are listed alphabetically by data record name. Section C.1.2 lists the SWITS and DMS look-up tables in alphabetical order. In both these sections, new DMS data records and added DMS data elements are indicated by bold type.

C.1.1 Data Record Tables

Activity Comment Record (ACTCOM) - New Data Record

Activity Package ID	•*ACT_PKG_ID	CHAR(14)
Activity Operator ID	•ACT_OP_ID	CHAR(8)
Activity Operator Comment	ACT_OP_COMMENTS	CHAR(255)
Activity Operator Activity Code	*ACT_OP_ACTIVITY_CD	CHAR(3)
Activity Date	ACT_DT	DATE

Applicable MSDS (APPMSDS)

This table lists any Material Safety Data Sheets which apply to chemicals referenced in the Hazardous Chemical Component table.

Applicable Package ID Number	•*APP_PKG_ID	CHAR(14)
Applicable MSDS	•*APP_MSDS (MSDS_ID)	CHAR(6)

Bin List (BIN) - New Data Record

This table is used to track the waste drums to specific AS/RS Bin locations.

Bin Number	*BIN_NUM	CHAR(3)
Bin Content Number of Drums	BIN_CONTENT_NUM	NUM(2)
Bin Package ID #1	*BIN_PKG_ID_1	CHAR(14)
Bin Package ID #2	*BIN_PKG_ID_2	CHAR(14)
Bin Package ID #3	*BIN_PKG_ID_3	CHAR(14)
Bin Package ID #4	*BIN_PKG_ID_4	CHAR(14)

Hazardous Chemical Component Record (CHEMCOMP)

This table identifies all chemical component names which may be used in describing hazardous and mixed waste.

Hazardous Package ID	•*HAZ_PKG ID	CHAR(14)
Hazardous Chemical Component ID	•*HAZ_COMP ID	CHAR(12)
Hazardous Chemical Component Text	•*HAZ_COMP_TEXT	CHAR(70)
Hazardous Chemical Component Parts Per Million	HAZ_COMP_PPM	CHAR(7)
Hazardous Chemical Component Weight	HAZ_COMP_WGT	NUM(12,4)
Hazardous Chemical Component Weight Percent	HAZ_COMP_WGT_PCT	CHAR(7)
Hazardous Chemical Component Emergency Planning and Community Right-to-know Act (EPCRA) Flag	HAZ_EPCRA_FLAG	CHAR(1)

Chain of Custody (COC) - New Data Record NORMALIZE

This table contains information about the sample Chain of Custody.

COC Sample ID Number	•*COC_SAMPLE ID	CHAR(12)
COC Sampling Location	COC_LOCATION	CHAR(10)
COC Ice Chest ID Number	COC_CHEST ID	CHAR(11)
COC Project Designation	COC_PROJ_DESGN	CHAR(25)
COC Temperature Sample Taken At	COC_TEMP	NUM(2)
COC Preservation	COC_PRESERVATION	CHAR(20)
COC Type of Container	COC_CNTYP_CD	CHAR(2)
COC Total Number of Containers	COC_TOT_NUM_CONTR	NUM(2)
COC Sample Volume	COC_VOL	NUM(3)
COC Sample Matrix	COC_SAMPLE_MTRX	CHAR(100)
COC Special Instructions	COC_SPEC_INSTRUCTION	CHAR(255)
COC Special Handling or Storage	COC_SPEC_HANDLING	CHAR(255)
COC Possible Sample Hazard Remarks	COC_HAZ_REMARKS	CHAR(255)
COC Company Contact	COC_PERS_NAME	CHAR(20)
COC Telephone Number	COC_PERS_PHONE	CHAR(12)
COC Method of Shipment	COC_METH_SHIPMENT	CHAR(20)
COC Bill of Lading/Air Bill #	COC_BILL_LADING	NUM(25)
COC SAF #	COC_SAF_NUM	NUM(10)
COC Offsite Property #	COC_PROPERTY_NUM	NUM(14)
COC Data Turnaround	COC_TURN_AROUND	CHAR(10)

Container Location (CONLOC) - New Data Record

This table is used to record the current location of specific containers within WRAP.

Container Package ID	•*CONLOC_PKG ID	CHAR(14)
Container Location Date	CONLOC_DT	DATE
Container Location ID	•*CONLOC_LOCN_ID	CHAR(10)

Container Relationship Record (CONREL)

This table permits the system to track the separating, repackaging, and combining of containers. It identifies the source CONTAINER occurrence and the resulting CONTAINER occurrence. Through this entity, an unlimited number of combinations and recombinations of containers can be tracked.

Container Relationship From Package ID	•*CONR_FROM_PKG ID	CHAR(14)
Container Relationship To Package ID	•*CONR_TO_PKG_ID	CHAR(14)

Container Relationship Code	CONR_REL_CD	CHAR(1)
Container Relationship Date	CONR_DT	DATE

Container Treatment (CONTREAT) - New Data Record

Container Treatment Package ID	*CONTREAT_PKG_ID	CHAR(14)
Container Treatment Date	*CONTREAT_DT	DATE
Container Treatment Worksheet ID	CONTREAT_WS_ID	CHAR(8)
Container Treatment User ID	CONTREAT_USER_ID	CHAR(7)
Container Treatment Comments	CONTREAT_COMMENT	CHAR(255)

Discharge Conveyor List (DISCHARGE) -New Data Record

This table is used to track the drums (by position) which are located on the WRAP 1 Discharge conveyor in the S&R Area.

Discharge Conveyor Sequence Number	*DISCHARGE_SEQ_NUM	NUM(12)
Discharge Conveyor Package ID	DISCHARGE_PKG_ID	CHAR(14)

Field Screening Record (FIELDSCRN) - New Data Record

Field screening container ID number	*SCRN_PKG_ID	CHAR(14)
Field screening date	SCRN_DATE	DATE
Field screening pH (meter)	SCRN_SCREEN_PH_MT	NUM(3,2)
Field screening pH (paper)	SCRN_SCREEN_PH_PAPER	NUM(2,1)

Hazardous Waste Container Detail Record (HAZDETAIL)

This is a one-to-one entity, a single occurrence being present for those containers that hold hazardous or mixed waste. The entity is not required for containers holding only radioactive waste.

Hazardous Detail Package ID	*HDET_PKG_ID	CHAR(14)
Hazardous Detail Container Status	HDET_CNTR_STATUS	CHAR(2)
Hazardous Detail Designation Code	HDET_DESIG_CD	CHAR(3)
Hazardous Detail Dangerous Waste Number	HDET_DW_NUM	CHAR(70)
Hazardous Detail Flashpoint	HDET_FLASHPOINT	CHAR(6)
Hazardous Detail Hazardous Property Codes	HDET_HAZPROP_CD	CHAR(6)
Hazardous Detail Individual Dot ID Number	HDET_IND_DOT_ID_NUM	CHAR(5)
Hazardous Detail Individual Not Otherwise Specified Description	HDET_IND_NOS_DESCR	CHAR(60)
Hazardous Detail Individual Shipping Name	HDET_IND_SHIP_NAME	CHAR(80)
Hazardous Detail Land Banned	HDET_LANDBAN	CHAR(14)
Hazardous Detail Other Land Banned 1	HDET_OTHER_LANDBAN_1	CHAR(8)
Hazardous Detail Other Land Banned 2	HDET_OTHER_LANDBAN_2	CHAR(8)
Hazardous Detail Other Land Banned 3	HDET_OTHER_LANDBAN_3	CHAR(8)
Hazardous Detail PH	HDET_PH	CHAR(5)
Hazardous Detail Storage Category Code	*HDET_SCAT_CD	CHAR(3)
Hazardous Detail PCB Description	HDET_PCB_DESCR	CHAR(40)
Hazardous Detail PCB Parts Per Million	HDET_PCB_PPM	CHAR(6)
Hazardous Detail PCB Removed Date	HDET_REMOVED_DT	DATE
Hazardous Detail PCB Type	HDET_PCB_TYPE	CHAR(1)
Hazardous Detail PCB Sub-Type	HDET_PCB_SUBTYPE	CHAR(1)

Hazardous Detail PCB Weight	HDET_PCB_WGT	NUM(12,4)
Hazardous Detail Waste Volume	HDET_WASTE_VOL	NUM(10,4)
Hazardous Detail Waste Status	HDET_WASTE_STATUS	CHAR(2)

Radioactive Isotope Quantity Record (ISOQTY)

The radioactive isotopes present in a container are identified through this table. For each isotope present, one occurrence of this entity will exist.

Radioactive Package ID	•*RAD_PKG_ID	CHAR(14)
Radioactive Isotope Number	•*RAD_ISO_NUM	NUM(3)
Radioactive Alpha CI	RAD_ALPHA_CI	FLOAT
Radioactive PE CI	RAD_PE_CI	FLOAT
Radioactive PU FGE	RAD_PU_FGE	FLOAT
Radioactive Quantity	RAD_QTY	FLOAT
Radioactive Unknown	RAD_UNKNOWN	FLOAT

Manifest Record (SWIR330) - Manifest Record

This table is populated with data that supports the DMSR0620 Report, Uniform Hazardous Waste Manifest (UHWM).

Manifest Number	*MFST_NUM	CHAR(10)
Manifest Item Number	MFST_ITEM_NUM	CHAR(4)
Manifest Lanbanned Dangerous Waste Numbers	MFST_BAN_DW_NUM	CHAR(100)
Manifest Package ID Numbers	MFST_PKG_IDS	CHAR(254)

Material Record (MATPACK) - Material Packet Record - New Data Record

This table is used to identify waste packets internal to the WRAP 1 process.

Material Package ID	•*MAT_PKG_ID	CHAR(14)
Material Group Code	•*MAT_GRP_CD	CHAR(2)

Message Log Record (MSGLOG) - New Data Record

History table for intersystem message headers used whenever communication occurs between the DMS and other WRAP systems (PCS, SIE, BWAS).

Message Log General Type	MSGLOG_GEN_TYPE	CHAR(8)
Message Log Specific Type	MSGLOG_SPEC_TYPE	CHAR(4)
Message Log Date	*MSGLOG_DT	DATE
Message Log String1-ASCII	MSGLOG_STRING_1	CHAR(2000)
Message Log String2-HEX	MSGLOG_STRING_2	LONG
Message Log Error	MSGLOG_ERROR_FLAG	CHAR(2)
Message Log Initialization	MSGLOG_INIT_FLAG	CHAR(2)
Message Log Sequence Number	MSGLOG_SEQ_NUM	CHAR(4)

NDA Assay Results (NDA) - New Data Record

NDA Package ID	*NDA_PKG_ID	CHAR(14)
NDA Date	NDA_DT	DATE
NDA Profile ID	NDA_PROF_ID	CHAR(6)
NDA Profile Flag	NDA_PROF_FLAG	CHAR(1)
NDA Message Date	NDA_MSG_DT	DATE
NDA Revisit Flag	NDA_RVST_FLAG	CHAR(1)

NDA Confidence Check	NDA_CONFIDENCE CK	CHAR(1)
NDA Secondary Waste Type Group	NDA_SWTYP_GROUP	CHAR(3)
NDA Waste Category	NDA_WASTE_CAT	CHAR(2)
NDA Ratio (PU239/PU240)	NDA_RATIO	FLOAT
NDA Total PU Ci	NDA_TOT_PU_CI	FLOAT
NDA Total PU Ci TMU	NDA_TMU_PU_CI	FLOAT
NDA Total PU FGE	NDA_TOT_PU_FGE	FLOAT
NDA Total PU FGE TMU	NDA_TMU_PU_FGE	FLOAT
NDA Total Alpha Ci	NDA_TOT_ALPHA_CI	FLOAT
NDA Total Alpha Ci TMU	NDA_TMU_ALPHA_CI	FLOAT
NDA Decay Heat	NDA_DECAY_HEAT	FLOAT
NDA Decay Heat TMU	NDA_TMU_DECAY_HEAT	FLOAT
NDA Number of ISO Records	NDA_ISO_TOT	NUM(3)
NDA Non-listed Long-lived Nuclides Flag	NDA_NONLISTED_FLAG	CHAR(1)

NDA Assay Isotopic Records (NDAISO) - New Data Record

NDA Isotopic Package ID	*NDAISO_PKG ID	CHAR(14)
NDA Isotopic Name	*NDAISO_NAME	CHAR(8)
NDA Isotopic Date	NDAISO_DT	DATE
NDA Isotopic Quantity	NDAISO_QTY	FLOAT
NDA Isotopic Quantity TMU	NDAISO_TMU_QTY	FLOAT
NDA Isotopic Measurement Confidence Check	NDAISO_CONFIDENCE_CHECK	CHAR(2)
NDA Isotopic Measurement Status	NDAISO_MEAS_STATUS	CHAR(3)
NDA Isotopic PAN Active Data Used	NDAISO_PAN_ACTIVE	CHAR(2)
NDA Isotopic PAN Passive Data Used	NDAISO_PAN_PASSIVE	CHAR(2)
NDA Isotopic GEA Data Used	NDAISO_GEA	CHAR(32)

NDE Results (NDE) - New Data Record

NDE Results Package ID	*NDE_PKG ID	CHAR(14)
NDE Results Date	*NDE_DATE	DATE
NDE Operator ID	NDE_OPER ID	CHAR(7)
NDE Comments	NDE_COMMENTS	CHAR(255)
NDE Failed Flag	NDE_FAILED_FLAG	CHAR(1)
NDE Container Video Disk File	NDE_VDISK_FILE	CHAR(5)
NDE Container Video Disk Number	NDE_VDISK_NUM	NUM(5)
NDE Container Video Tape Number	NDE_VTAPE_NUM	NUM(5)
NDE Container Video Tape Start	NDE_VTAPE_START	CHAR(5)
NDE Container Video Tape Storage Location	NDE_VTAPE_STOR_LOCN	CHAR(10)

Isotopic Distribution (PAM) - New Data Record

PAM Package ID number	*PAM_PKG ID	CHAR(14)
PAM Gram Quantity	PAM_QTY	FLOAT
PAM Plutonium 239 Fissile Gram Equivalent	PAM_PU_FGE	FLOAT
PAM Uncertainty	PAM_UNCERTAINTY	FLOAT

Payload Container Certification Record (PAYLOAD) - New Data Record

Payload Package ID Number	*PAYLOAD_PKG ID	CHAR(14)
Payload Decay Heat Limit	PAYLOAD_HEAT_LIMIT	FLOAT

Payload Shipping Category	*PAYLOAD_SHIP_CAT	CHAR(10)
Payload Approved To Ship	PAYLOAD_SHIP_APP_FLAG	CHAR(1)
Payload Container Type	PAYLOAD_CNTR_TYPE	CHAR(3)
Payload Liner Punctured/Filtered	PAYLOAD_LINER	CHAR(8)
Payload Filter Model	PAYLOAD_FILTER_MODEL	CHAR(10)
Payload Filter Installation	PAYLOAD_INSTALLED	CHAR(3)
Payload Gas Generation Rate	PAYLOAD_GAS_GEN_RATE	CHAR(3)
Payload Hydrogen Generation Rate	PAYLOAD_HYDROGEN_RATE	CHAR(1)
Payload Flammable VOC Concentration	PAYLOAD_VOC_CONC	CHAR(3)
Payload Container Weight Error	PAYLOAD_WEIGHT_ERROR	NUM(10,2)
Payload Decay Heat	PAYLOAD_DECAY_HEAT	FLOAT
Payload Container Decay Heat Error	PAYLOAD_HEAT_ERROR	FLOAT
Payload Fissile Mass Error (2X)	PAYLOAD_FISSILE_ERROR	FLOAT
Payload Certification Official	PAYLOAD_CERT_OFFICIAL	CHAR(25)
Payload Certification Date	PAYLOAD_CERT_DT	DATE
Payload Package Assembly ID	PAYLOAD_ASSEMBLY_ID	CHAR(8)

<u>Payload Assembly Certification Record</u>	(PAYLOADASBLY) - New Data Record	
Assembly TRUPACT OCA Body Number	ASBLY_OCA_BODY_ID	CHAR(8)
Assembly TRUPACT OCA Lid Number	ASBLY_OCA_LID_ID	CHAR(8)
Assembly Shipment Number	*ASBLY_SHIPMENT_NO	CHAR(8)
Assembly Payload Shipping Category	*ASBLY_SHIP_CAT	CHAR(10)
Assembly Decay Heat Limit - Ship Cat	ASBLY_SHIP_CAT_HEAT_LT	FLOAT
Assembly Payload Configuration	ASBLY_CONFIGURATION	CHAR(4)
Assembly Weight of TRUPACT	ASBLY_WGT_TRUPACT	NUM(10,2)
Assembly Dose Rate - Pkg	ASBLY_DOSE_RATE	NUM(8,2)
Assembly Dose Rate at 2 m	ASBLY_DOSE_RATE_2M	NUM(8,2)
Assembly Date of ICV Closure	ASBLY_ICV_CLOSURE_DT	DATE
Assembly Approved For Shipment Flag	ASBLY_APPROVED_SHIP_FLAG	CHAR(1)
Assembly Shipment Cert Official	ASBLY_SHIPMENT_OFFICIAL	CHAR(25)
Assembly Shipment Cert Date	ASBLY_CERT_DT	DATE

Physical Component Record (PHYSCOMP)

This entity identifies those physical components present within a container. One occurrence of the entity will exist for each different physical component present.

Physical Component Package ID	*PHYS_PKG_ID	CHAR(14)
Physical Component Description	*PHYS_COMP_DESCR	CHAR(30)
Physical Component Volume Percent	PHYS_COMP_VOL_PCT	NUM(6,3)
Physical Component Weight	PHYS_COMP_WGT	NUM(8,2)

Process Pick List (PROCLIST) - New Data Record

This table is used to generate a picklist of waste containers to be removed from the AS/RS for processing in WRAP.

Process List Package ID	*PROC_PKG_ID	CHAR(14)
Process List Route Code	PROC_ROUTE_CD	CHAR(4)
Process List Sample Flag	PROC_SAMPLE_FLAG	CHAR(1)
Process List Compliant Flag	PROC_COMPLIANT_FLAG	CHAR(1)
Process List Profile ID	PROC_PROF_ID	CHAR(6)
Process List PCS Flag	PROC_PCS_FLAG	CHAR(1)

Processing Add List (PROCADD) - New Data Record

This table is used to generate a listing of waste containers to be processed in WRAP. It also designates the route and sampling and processing requirements. This list is added to PROCLIST.

Processing Add List Package ID	*PROCADD_PKG ID	CHAR(14)
Processing Add List Route Code	PROCADD_ROUTE CD	CHAR(4)
Processing Add List Sample Flag	PROCADD_SAMPLE FLAG	CHAR(1)
Processing Add List Compliant Flag	PROCADD_COMPLIANT FLAG	CHAR(1)
Processing Add List Profile ID	PROCADD_PROF_ID	CHAR(6)

Radioactive Waste Container Detail Record (RADDETAIL)

This is a one-to-one entity, a single occurrence being present for those containers that hold radioactive or mixed waste. The entity is not required for containers holding only hazardous waste.

Radioactive Detail Package Id	*RDET_PKG ID	CHAR(14)
Radioactive Detail Assay Number	RDET_ASSAY NUM	CHAR(14)
Radioactive Detail Beta/Gamma Dose Rate	RDET_BG_DOSE RATE	FLOAT
Radioactive Detail Certification Date	RDET_CERT DT	DATE
Radioactive Detail Dose Equivalence Curie Flag	RDET_DE_CI_FLAG	CHAR(1)
Radioactive Detail Neutron Dose Rate	RDET_NEUT DOSE RATE	NUM(8,2)
Radioactive Detail Organic Volume Percent	RDET_ORGANIC_VOL_PCT	NUM(3)
Radioactive Detail Organic Weight	RDET_ORGANIC WGT	NUM(8,2)
Radioactive Detail Property Disposal Request Number	RDET_PDR_NUM	CHAR(9)
Radioactive Detail SDAR Approval No.	RDET_SDAR_APPRV_NUM	CHAR(14)
Radioactive Detail Seal Number	RDET_SEAL_NUM	CHAR(14)
Radioactive Detail Solid Waste Information Management System Code	RDET_SWIMS_CD	CHAR(2)
Radioactive Detail Secondary Waste Type Code	*RDET_SWTYP_CD	CHAR(2)
Radioactive Detail Secondary Waste Type Group	RDET_SWTYP_GROUP	CHAR(3)
Radioactive Detail Thermal Power	RDET_THERMAL POWER	FLOAT
Radioactive Detail Total Alpha Ci	RDET_TOT_ALPHA CI	FLOAT
Radioactive Detail Total Beta/Gamma Ci	RDET_TOT_BG CI	FLOAT
Radioactive Detail Total Dose Equivalence Curie	RDET_TOT_DE_CI	FLOAT
Radioactive Detail Total PE Ci	RDET_TOT_PE CI	FLOAT
Radioactive Detail Total PU FGE	RDET_TOT_PU_FGE	FLOAT
Radioactive Detail Void Code	RDET_VOID_CD	CHAR(6)
Radioactive Detail Waste Category	RDET_WASTE CAT	CHAR(5)
Radioactive Detail Waste Makeup	RDET_WASTE_MAKEUP	CHAR(1)
Radioactive Detail WRAP Category	RDET_WRAP_CAT	CHAR(2)

Radiologic Material Inventory (RADMAT) - New Data Record

This table defines data elements required to track radiological levels within WRAP.

Area ID		*RADMAT_ID
CHAR(1)		
Area Description	RADMAT_DESCR	CHAR(50)
Area Limit	RADMAT_LIMIT	FLOAT

Current Rad Total	RADMAT_RAD_TOTAL	FLOAT
Date & Time of calculation	RADMAT_DT	DATE
Glovebox Package ID	RADMAT_GB_PKG_ID	CHAR(14)
Units (FGE or CI)	RADMAT_UNITS	CHAR(3)
Area Alarm Flag	RADMAT_ALARM	CHAR(1)

Receiving Display Record (RECDISP) - New Data Record

Table to record incoming PCS message of received container package IDs.
This table is an internal temporary data store used during the Receiving process.

Receiving Display Block Number	RECDISP_BLK_NUM	NUM(3)
Receiving Display Package ID	RECDISP_PKG_ID	CHAR(14)
Receiving Display Inner Package ID	RECDISP_INNER_PKG_ID	CHAR(14)

Sample Data Record (SAMPLE) - Data Elements Added

Status data used to track samples through laboratory testing sites.

Sample ID	*SAM_SAMPLE_ID	CHAR(12)
Sample Closed Flag	SAM_CLOSED_FLAG	CHAR(1)
Sample Comments	SAM_COMMENTS	CHAR(255)
Sample Laboratory ID	*SAM_LAB_ID	CHAR(11)
Sample OK at Laboratory	SAM_OK_AT_LAB	CHAR(1)
Sample Radioactive Report Date	SAM_RAD_REPORT_DT	DATE
Sample Report Date	SAM_REPORT_DT	DATE
Sample Returned	SAM_RETURN	CHAR(1)
Sample Returned Date	SAM_RETURN_DT	DATE
Sample Returned To Package	SAM_RETURN_TO_PKG	CHAR(1)
Sample Taken By	*SAM_TAKEN_BY	CHAR(6)
Sample Taken Date	SAM_TAKEN_DT	DATE
Sample To Laboratory Date	SAM_TOLAB_DT	DATE
Sample To Radioactive Laboratory Date	SAM_TO_RAD_LAB_DT	DATE
Sample From Operator ID	SAM_FROM_OP_ID	CHAR(20)
Sample To Operator ID	SAM_TO_OP_ID	CHAR(20)
Sample Transfer Date	SAM_TRANSFER_DT	DATE

Sample Data Reference Record (SAMPREF)

The table linking containers to packages. Can be a many-to-many relationship.

Sample Reference Sample ID	*SREF_SAMPLE_ID	CHAR(12)
Sample Reference Package ID	*SREF_PKG_ID	CHAR(14)
Sample Reference Date	SREF_DATE	DATE

Security Action Log (SECLOG)

This is a temporary working entity that is used by the security control software within SWITS to track updates to the security database.

Security Action Log Time	SLOG_TIME	DATE
Security Action Log Operation	SLOG_OP	CHAR(1)
Security Action Log User ID	SLOG_USERID	CHAR(7)
Security Action Log Table	SLOG_TABLE	CHAR(20)
Security Action Log Privilege	SLOG_PRIVILEGE	CHAR(10)

Shipment History Record (SHIPHIST)

This entity records all shipments of a container. Combined with the FACILITY HISTORY and CONTAINER RELATIONSHIP entities, a complete history of all activity for a container is maintained.

Shipment History Manifest Number	•*SHPHST_MFST_NUM	CHAR(10)
Shipment History Item Number	•*SHPHST_ITEM_NUM	CHAR(4)
Shipment History Package ID	•*SHPHST_PKG_ID	CHAR(14)
Shipment History Nuclear Material Item Transfer Number	SHPHST_NMIT_NUM	CHAR(10)
Shipment History Return	SHPHST_RETURN	CHAR(1)
Shipment History Radioactive Shipment Record Number	SHPHST_RSR_NUM	CHAR(10)
Shipment History 741 Number	SHPHST_741_NUM	CHAR(11)

Shipping Pick List (SHIPPICK) - New Data Record

Table to identify and group containers for retrieval from the AS/RS for shipment.

Shipping Pick List Package ID	*SHIPPICK_PKG_ID	CHAR(14)
Shipping Pick List Shipment Number	*SHIPPICK_SHIP_NUM	CHAR(8)

Shipment Item Record (SHIPITEM)

This entity identifies a specific line item within a waste shipment. One or more containers may be associated with the shipment through the SHIPMENT HISTORY entity.

Shipment Item Manifest Number	•*SHPITM_MFST_NUM	CHAR(10)
Shipment Item Number	*SHPITM_ITEM_NUM	CHAR(4)
Shipment Item Container Count	SHPITM_CNTR_COUNT	NUM(3)
Shipment Item DOT Hazardous Class	SHPITM_DOT_HAZ_CLASS	CHAR(20)
Shipment Item DOT ID Number	SHPITM_DOT_ID_NUM	CHAR(6)
Shipment Item DOT Name	SHPITM_DOT_NAME	CHAR(100)
Shipment Item Not Otherwise Specified Description	SHPITM_NOS_DESCR	CHAR(60)
Shipment Item Profile Number	SHPITM_PROFILE_NUM	CHAR(10)
Shipment Item Quantity Unit	SHPITM_QTY_UNIT	CHAR(1)
Shipment Item Reportable Quantity Flag	SHPITM_RQ_FLAG	CHAR(1)
Shipment Item Total Quantity	SHPITM_TOT_QTY	NUM(12,4)
Shipment Item TSD Process	SHPITM_TSD_PROCESS	CHAR(50)

Shipment Record (SHIPMENT)

This entity identifies a specific line item within a waste shipment. One or more containers may be associated with the shipment through the SHIPMENT HISTORY entity.

Shipment Manifest Number	*SHPMNT_MFST_NUM	CHAR(10)
Shipment Certification Date	SHPMNT_CERT_DT	DATE
Shipment Group ID	•SHPMNT_GGRP_ID	CHAR(8)
Shipment Manifest Return Date	SHPMNT_MFST_RET_DT	DATE
Shipment Manifest Type Code	SHPMNT_MFST_TYPE_CD	CHAR(3)
Shipment Offsite Company ID	•SHPMNT_OFFSITE_CMPNY_ID	CHAR(4)
Shipment Offsite Company Type	•SHPMNT_OFFSITE_CMPNY_TYPE	CHAR(3)
Shipment Receiving Facility ID	•SHPMNT_RECV_FACIL_ID	CHAR(11)
Shipment Radioactive Shipment Record Type	SHPMNT_RSR_TYPE	CHAR(2)
Shipment Scheduled Date	SHPMNT_SCHED_DT	DATE

Shipment Ship Date	SHPMNT_SHIP_DT	DATE
Shipment Transportation Company ID	•SHPMNT_TRANSP_CMPNY_ID	CHAR(4)
Shipment Transportation Company Type	•SHPMNT_TRANSP_CMPNY_TYPE	CHAR(3)
Shipment TSD Accept Date	SHPMNT_TSD_ACCEPT_DT	DATE

TRUPACT Shipping Record (TRUPACT) - New Data Record

TRUPACT package ID number	•*TRUPACT_PKG_ID	CHAR(14)
TRUPACT WAC exception number	TRUPACT_WAC_EXCEPT	CHAR(7)
TRUPACT II number	TRUPACT_ID	CHAR(3)
TRUPACT record type	TRUPACT_RECORD_TYPE	CHAR(1)
TRUPACT actual ship date	TRUPACT_SHIP_DATE	DATE

TRUPACT Shipping Pick List (TRUPACTSHIPLIST) - New Data Record

TRUPACT Shipping Pick List Package ID	*TRUPACTSL_PKG_ID	CHAR(14)
TRUPACT Shipping Pick List Shipment Number	*TRUPACTSL_SHIP_NUM	CHAR(8)
TRUPACT Shipping Pick List Tier	TRUPACTSL_TIER	CHAR(1)

Verification Data - Applicable MSDS Record (VERAPPMSDS) - New Data Record

Verification Package ID Number	•*VER_APP_PKG_ID	CHAR(14)
Verification MSDS	•*VER_APP_MSDS	CHAR(6)
Verification MSDS Flag	VER_APP_MSDS_FLAG	CHAR(1)

Verification Data - Hazardous Chemical Component Record (VERCHEMCOMP) - New Data Record

Verification Package ID Number	•*VER_HAZ_COMP_PKG_ID	CHAR(14)
Verification Component ID	VER_HAZ_COMP_ID	CHAR(12)
Verification Component ID Flag	VER_HAZ_COMP_ID_FLAG	CHAR(1)
Verification Component Text	VER_HAZ_COMP_TEXT	CHAR(70)
Verification Component Text Flag	VER_HAZ_COMP_TEXT_FLAG	CHAR(1)
Verification ppm	VER_HAZ_COMP_PPM	CHAR(7)
Verification ppm Flag	VER_HAZ_COMP_PPM_FLAG	CHAR(1)
Verification Weight	VER_HAZ_COMP_WGT	NUM(12,4)
Verification Weight Flag	VER_HAZ_COMP_WGT_FLAG	CHAR(1)
Verification Weight %	VER_HAZ_COMP_WGT_PCT	CHAR(7)
Verification Weight % Flag	VER_HAZ_COMP_WGT_PCT_FLAG	CHAR(1)

Verification Data - Radioactive Isotope Quantity Record (VERISOQTY) - New Data Record

Verification Package ID Number	•*VER_RAD_PKG_ID	CHAR(14)
Verification Isotope Number	•*VER_RAD_ISO_NUM	NUM(3)
Verification Isotope Number Flag	VER_RAD_ISO_NUM_FLAG	CHAR(1)
Verification Alpha Ci	VER_RAD_ALPHA_CI	FLOAT
Verification Alpha Ci Flag	VER_RAD_ALPHA_CI_FLAG	CHAR(1)
Verification PE Ci	VER_RAD_PE_CI	FLOAT
Verification PE Ci Flag	VER_RAD_PE_CI_FLAG	CHAR(1)
Verification Pu FGE	VER_RAD_PU_FGE	FLOAT
Verification Pu FGE Flag	VER_RAD_PU_FGE_FLAG	CHAR(1)
Verification Radioactive Quantity	VER_RAD_QTY	FLOAT
Verification Radioactive Quantity Flag	VER_RAD_QTY_FLAG	CHAR(1)

Verification Data - Container and Content Record (VERWASTE) - New Data Record

This table is used for all global container verification information. Data elements are created and updated as waste containers are processed and verified through the facility. This table is generated in WRAP 1 DMS.

Verification Package ID Number	.*VER_PKG ID	CHAR(14)
Verification Sec. Waste Type Group	VER_RDET_SWTYP GROUP	CHAR(3)
Verification Sec Waste Type Group Flag	VER_RDET_SWTYP_GROUP FLAGCHAR(1)	
Verification Content Thermal Power	VER_RDET_THERMAL POWER	FLOAT
Verification Content Thermal Power Flg	VER_RDET_THERMAL_POWER FLAGCHAR(1)	
Verification Total Alpha Ci	VER_RDET_TOT ALPHA CI	FLOAT
Verification Total Alpha Ci Flag	VER_RDET_TOT_ALPHA_CI FLAGCHAR(1)	
Verification Total Beta/Gamma Ci	VER_RDET_TOT_BG CI	FLOAT
Verification Total Beta/Gamma Ci Flag	VER_RDET_TOT_BG_CI FLAG	CHAR(1)
Verification Total PE Ci	VER_RDET_TOT PE CI	FLOAT
Verification Total PE Ci Flag	VER_RDET_TOT_PE_CI FLAG	CHAR(1)
Verification Total Pu FGE	VER_RDET_TOT PU_FGE	FLOAT
Verification Total Pu FGE Flag	VER_RDET_TOT_PU_FGE FLAG	CHAR(1)
Verification Waste Category	VER_RDET_WASTE CAT	CHAR(5)
Verification Waste Category Flag	VER_RDET_WASTE_CAT FLAG	CHAR(1)
Verification Total Quantity Flag	VER_TOT_QTY FLAG	CHAR(1)
Verification Container Gross Weight	VER_CON_GROSS WGT	NUM(10,2)
Verification Container Gross Wt. Flag	VER_CON_GROSS_WGT FLAG	CHAR(1)
Verification Designation Code	VER_HDET_DESIG_CD	CHAR(3)
Verification Designation Code Flag	VER_HDET_DESIG_CD FLAG	CHAR(1)
Verification Dangerous Waste Numbers	VER_HDET_DW_NUM	CHAR(70)
Verification Dangerous Waste Nos. Flag	VER_HDET_DW_NUM FLAG	CHAR(1)
Verification Flashpoint	VER_HDET_FLASHPOINT	CHAR(6)
Verification Flashpoint Flag	VER_HDET_FLASHPOINT FLAG	CHAR(1)
Verification Hazardous Property Code	VER_HDET_HAZPROP_CD	CHAR(6)
Verification Hazardous Property Cd Flg	VER_HDET_HAZPROP_CD FLAG	CHAR(1)
Verification Land Ban Codes by DW No.	VER_HDET_LANDBAN	CHAR(14)
Verification Land Ban Codes by DW Number Flag	VER_HDET_LANDBAN_FLAG	CHAR(1)
Verification Other Land Ban Codes 1	VER_HDET_OTHER_LANDBAN 1	CHAR(8)
Verification Other Land Ban Codes 1 Flag	VER_OTHER_LANDBAN_1_FLAG	CHAR(1)
Verification Other Land Ban Codes 2	VER_HDET_OTHER_LANDBAN 2	CHAR(8)
Verification Other Land Ban Codes 2 Flag	VER_OTHER_LANDBAN_2_FLAG	CHAR(1)
Verification Other Land Ban Codes 3	VER_HDET_OTHER_LANDBAN 3	CHAR(8)
Verification Other Land Ban Codes 3 Flag	VER_OTHER_LANDBAN_3_FLAG	CHAR(1)
Verification pH	VER_HDET PH	CHAR(5)
Verification pH Flag	VER_HDET_PH FLAG	CHAR(1)
Verification PCB Description	VER_HDET_PCB_DESCR	CHAR(40)
Verification PCB Description Flag	VER_HDET_PCB_DESCR_FLAG	CHAR(1)
Verification PCB ppm	VER_HDET_PCB_PPM	CHAR(6)
Verification PCB ppm Flag	VER_HDET_PCB_PPM FLAG	CHAR(1)
Verification PCB Type	VER_HDET_PCB_TYPE	CHAR(1)
Verification PCB Type Flag	VER_HDET_PCB_TYPE FLAG	CHAR(1)
Verification PCB Subtype	VER_HDET_PCB_SUBTYPE	CHAR(1)
Verification PCB Subtype Flag	VER_HDET_PCB_SUBTYPE_FLAGCHAR(1)	
Verification PCB Weight	VER_HDET_PCB_WGT	NUM(12,4)
Verification PCB Weight Flag	VER_HDET_PCB_WGT FLAG	CHAR(1)
Verification Storage Category Code	VER_CON_SCAT_CD	CHAR(3)

Verification Storage Category Code Flag	VER_CON_SCAT_CD_FLAG	CHAR(1)
Verification Waste Volume	VER_HDET_WASTE_VOL	NUM(10,4)
Verification Waste Volume Flag	VER_HDET_WASTE_VOL_FLAG	CHAR(1)

Container and Content Record (WASTE)

This table is used for all global container information. Data elements are updated as waste containers are processed through the facility. This table is downloaded from SWITS.

Container Package ID	*CON_PKG_ID	CHAR(14)
Container Alert Flag	CON_ALERT_FLAG	CHAR(1)
Container Accumulation Date	CON_ACCUM_DT	DATE
Container Chemical Nature Code	CON_CHEM_NATURE_CD	CHAR(2)
Container Volume	*CON_CNTR_VOL	NUM(10,4)
Container Type Code	*CON_CNTYP_CD	CHAR(2)
Container DOT Specification	CON_DOT_SPEC	CHAR(3)
Container Generator Comment	CON_GENER_COMMENT	CHAR(80)
Container Generator Waste Description	CON_GENER_WASTE_DESCR	CHAR(255)
Container Gross Weight	CON_GROSS_WGT	NUM(10,2)
Container Item Number	CON_ITEM_NUM	CHAR(4)
Container Labpack Flag	CON_LABPACK_FLAG	CHAR(1)
Container Location Facility Area	CON_LOCN_FACIL_AREA	CHAR(6)
Container Location Facility ID	*CON_LOCN_FACIL_ID	CHAR(11)
Container Manifest Number	CON_MFST_NUM	CHAR(10)
Container Physical State Code	CON_PHYS_STATE_CD	CHAR(3)
Container Package Date	CON_PKG_DT	DATE
Container Package Status	*CON_PKG_STATUS	CHAR(1)
Container Primary Waste Type Code	*CON_PWTYP_CD	CHAR(2)
Container Sample Flag	CON_SAMPLE_FLAG	CHAR(1)
Container Storage Category Code	CON_SCAT_CD	CHAR(3)
Container Secondary Package ID	CON_SEC_PKG_ID	CHAR(14)
Container Ship Date	CON_SHIP_DT	DATE
Container Size Description	*CON_SIZE_DESCR	CHAR(14)
Container Source Charge Code	CON_SRCE_CHRG_CD	CHAR(8)
Container Source Company Id	*CON_SRCE_CMPNY_ID	CHAR(4)
Container Source Facility ID	*CON_SRCE_FACIL_ID	CHAR(11)
Container Source Organization	*CON_SRCE_ORG	CHAR(8)
Container Tare Weight	CON_TARE_WGT	NUM(10,2)
Container Treatment Date	CON_TREATMENT_DT	DATE
Container TSD Accept Date	CON_TSD_ACCEPT_DT	DATE
Container Waste Weight	CON_WASTE_WGT	NUM(12,4)

Container & Content Extension Record (WASTEXT) - New Data Record

This table is used for all WRAP-specific container information. Data elements are updated as waste containers are processed through the facility.

Container Extension Package ID	*CONEXT_PKG_ID	CHAR(14)
WRAP RWM Container Status	CONEXT_CNTR_STATUS	CHAR(2)
Container Compliant Flag	CONEXT_COMPLIANT_FLAG	CHAR(1)
Container Contamination Flag	CONEXT_CONTAM_FLAG	CHAR(1)
Container Height	CONEXT_HEIGHT	NUM(12,4)
Container RADMAT ID	CONEXT_RADMAT_ID	CHAR(1)
Container NDA Review Flag	CONEXT_NDA_REVIEW_FLAG	CHAR(1)

Container NDE Verified Flag	CONEXT_NDE_VER_FLAG	CHAR(1)
Container Profile Flag	CONEXT_PROF_FLAG	CHAR(1)
Container Profile ID	CONEXT_PROF_ID	CHAR(6)
Container Route Code	CONEXT_ROUTE_CD	CHAR(4)
Container Revisit Flag	CONEXT_RVST_FLAG	CHAR(1)
Container Shipment Picklist Code	•CONEXT_SHIPPICK_CD	CHAR(6)
Container Treatment Flag	CONEXT_TREATMENT_FLAG	CHAR(1)
Container TRUCON Code	•CONEXT_TRUCON_CD	CHAR(6)
Container Use Code	•CONEXT_USE_CD	CHAR(2)
Container WRAP Sample Flag	CONEXT_WRAP_SAM_FLAG	CHAR(1)
Container WRAP Status Code	CONEXT_WRAP_STAT_CD	CHAR(2)

Treatment Worksheet (WORKSHEET) - New Data Record

This data record is used to summarize the waste containers (not drums) that are to be treated using a common treatment procedure. Containers to be treated at the same time.

Treatment Worksheet ID	*WORKSHEET_ID	CHAR(8)
Treatment Worksheet Name	WORKSHEET_NAME	CHAR(12)
Treatment Procedure Number	•WORKSHEET_PROC_NUM	CHAR(14)
Treatment File Pointer	WORKSHEET_FILE_POINT	CHAR(14)

Worksheet Item (WORKITEM) - New Data Record

This data record contains the list of transfer drum/purge port PINs and packet/sample PINs to be treated on a worksheet.

Worksheet ID	•*WORKSHEET_ID	CHAR(8)
Worksheet Package ID	*WORKSHEET_PKG_ID	CHAR(14)
Worksheet Transfer Container PIN	WORKSHEET_XFR_PIN	CHAR(14)

B.1.2 Data Look-Up Tables

Calibration Container Table (CALCON) - New Data Table

Calibration Package ID	*CALCON_PKG_ID	CHAR(14)
Calibration Package Description	*CALCON_DESCR	CHAR(7)

Miscellaneous Code Table (CODECHECK)

Occurrences of this entity contain the name of a data element and a specific valid value that may be stored in the data element of the same name in the functional database. A data element with 1-9 valid values will have a corresponding number of occurrences within this table to provide database maintenance software with a reference of those valid values. Data elements with greater than nine valid values may have a separate validation table where desirable.

Code Field Name	*CODE_FIELD_NAME	CHAR(24)
Code Value	*CODE_VALUE	CHAR(12)
Code Description	CODE_DESCR	CHAR(70)

Company Table (COMPANY)

The table identifies all companies involved with the generation, transportation, or disposition of waste tracked by the SWITS system.

Company ID	*CMPNY_ID	CHAR(4)
Company Type	*CMPNY_TYPE	CHAR(3)
Company City	CMPNY_CITY	CHAR(15)
Company Environmental Protection Agency (EPA) ID	CMPNY_EPA_ID	CHAR(12)
Company Location	CMPNY_LOCATION	CHAR(3)
Company Phone	CMPNY_PHONE	CHAR(12)
Company State Code	*CMPNY_STATE_CD	CHAR(2)
Company Street	CMPNY_STREET	CHAR(36)
Company Title	CMPNY_TITLE	CHAR(60)
Company Zip Code	CMPNY_ZIP_CD	CHAR(10)

Container Size Table (CONSIZE)

This table holds all the valid size descriptions for the various container types, such as "55 Gallon" for drums.

Container Size Container Type Code	*CSZ_CNTYP_CD	CHAR(2)
Container Size Description	*CSZ_DESCR	CHAR(14)
Container Size Volume	CSZ_VOL	NUM(10,4)

Container Type Table (CONTYPE)

All containers fall into one of several specific types. This entity identifies all valid container types.

Container Type Code	*CNTYP_CD	CHAR(2)
Container Type Description	CNTYP_DESCR	CHAR(42)

Facility Curie Limit (CURIELIMIT)

The limits in Curies for each building in which radioactive or mixed waste may be stored.

Curie Limit Facility ID	*CL_FACIL_ID	CHAR(11)
Curie Limit Section	*CL_SECTION	CHAR(2)
Curie Limit	CL_LIMIT	NUM(7,2)
Curie Limit Dose Equivalent Curie Limit		
CL_DE_CI_LIMIT	NUM(7,2)	

Field Help Table (DATADICT)

This table contains help information which provides help messages at the field level.

Data Dictionary Table Name	*DD_TABLE_NAME	CHAR(20)
Data Dictionary Field Name	*DD_FIELD_NAME	CHAR(36)
Data Dictionary Type	DD_DATA_TYPE	CHAR(15)
Data Dictionary Help Text	DD_HELP_TEXT	LONG

DOT Container Specification Table (DOTSPEC)

This table holds Department of Transportation specifications for container types, such as 17C.

DOT Specification	*DOT_SPEC	CHAR(3)
DOT Specification Description	DOT_DESCR	CHAR(60)

Dangerous Waste Number Table (DWNUM)

The table of Dangerous Waste Numbers which are codes used to classify the type of hazards in a container of hazardous or mixed waste.

Dangerous Waste Number	*DW_NUM	CHAR(4)
Dangerous Waste Description	DW_DESCR	CHAR(20)
Dangerous Waste Landban	DW_LANDBAN	CHAR(1)
Dangerous Waste Sort Hazardous	DW_SORT_HAZ	NUM(3)
Dangerous Waste Sort Mixed	DW_SORT_MIXED	NUM(3)

Error Message Table (ERRMESSAGE)

This entity maintains a list of all error messages that may be displayed by the SWITS system. A narrative is provided to guide the recipient of the message in the proper actions to correct the error.

Error Message Number	*ERR_NUM	CHAR(4)
Error Message Text	ERR_TEXT	CHAR(72)
Error Message Description	ERR_DESCR	CHAR(255)

Facility Table (FACILITY)

Each facility on the Hanford site is identified by this entity.

Facility ID	*FACIL_ID	CHAR(11)
Facility Area	FACIL_AREA	CHAR(6)
Facility Barcode ID	FACIL_BAR_ID	CHAR(5)
Facility Name	FACIL_NAME	CHAR(50)

Form Help Table (FORMHELP)

This table contains help information which provides help messages at the form level.

Form Help Name	*FH FORM NAME	CHAR(8)
Form Help Text	FH_HELP_TEXT	LONG

Hazardous Chemical Component Table (HAZCOMP)

Each hazardous chemical that is present in a container package is identified by an occurrence of this entity. If a container contains four different hazardous chemicals, four occurrences of this entity will be present.

Hazardous Chemical Component ID	*HCC_ID	CHAR(12)
Hazardous Chemical Component Chemical Abstract Number	HCC_CAS	CHAR(12)
Hazardous Chemical Component Description		HCC_DESCR
CHAR(70)		
Hazardous Chemical Component New ID	HCC_NEWID	CHAR(12)

Isotope Table (ISOTOPE)

Each isotope that can be present in a waste container is represented by an occurrence of this entity.

Isotope Number	*ISO_NUM	NUM(3)
Isotope Class A Limits	ISO_CLASS_A_LIM	FLOAT
Isotope Class B Limits	ISO_CLASS_B_LIM	FLOAT
Isotope Class C Limits	ISO_CLASS_C_LIM	FLOAT
Isotope Class 1 Limits	ISO_CLASS_1_LIM	FLOAT
Isotope Class 3 Limits	ISO_CLASS_3_LIM	FLOAT
Isotope Concentration Limits	ISO_CONSTR_LIMIT	FLOAT
Isotope Conversion Factor	ISO_CONV_FACTR	FLOAT
Isotope Dose Equivalence Curie Factor	ISO_DE_CT_FACTR	FLOAT
Isotope Daughter Products Isotope Number		
ISO_DTR_ISO		NUM(3)
Isotope Daughter Products Factor	ISO_DTRPRD_FACTR	FLOAT
Isotope Enrichment	ISO_ENRICH	CHAR(1)
Isotope Half Life	ISO_HALFLIFE	FLOAT
Isotope Mixed Activation Products Factor		
ISO_MAP_FACTR		FLOAT
Isotope Mixed Activation Products Name	ISO_MAP_NAME	CHAR(5)
Isotope Mixed Fission Products Factor	ISO_MFP_FACTR	FLOAT
Isotope Name	ISO_NAME	CHAR(20)
Isotope Unit	ISO_UNIT	CHAR(2)

Laboratory Table (LAB)

This entity identifies all the laboratories available to test waste samples.

Laboratory ID	*LAB_ID	CHAR(11)
Laboratory Name	LAB_NAME	CHAR(30)

Container Location Matrix Table (LOCMTX) - New Data Table

Container From Location	*LOCMTX_FROM_LOCN_ID	CHAR(10)
Container To Location	*LOCMTX_TO_LOCN_ID	CHAR(10)

Location Table (LOCN) - New Data Table

This table is used to validate WRAP facility locations.

Location ID	*LOCN ID	CHAR(10)
Location Description	LOCN_DESC	CHAR(60)

Material Table (MATL) - New Data Table

This table is used to validate detailed descriptions for waste packet group codes.

Material Group Code	*MATL_GRP_CD	CHAR(2)
Material Group Description	MATL_GRP_DESCR	CHAR(30)

Material Safety Data Sheets (MSDS)

The reference number and description of Material Safety Data Sheets.

Material Safety Data Sheet ID	*MSDS ID	CHAR(6)
Material Safety Date Sheet Description	MSDS_DESCR	CHAR(40)

Person Table (PERSON)

This entity keeps track of all the persons associated with SWITS, whether they are users or not.

Person ID	*PERS ID	CHAR(6)
Person City	PERS_CITY	CHAR(15)
Person Company ID	*PERS_CMPNY ID	CHAR(4)
Person Company Type	*PERS_CMPNY_TYPE	CHAR(3)
Person MSIN	PERS_MSIN	CHAR(5)
Person Name	PERS_NAME	CHAR(20)
Person Phone Number	PERS_PHONE	CHAR(12)
Person State Code	*PERS_STATE_CD	CHAR(2)
Person Street.	PERS_STREET	CHAR(36)
Person Zip Code	PERS_ZIP_CD	CHAR(10)

Physical Component Description Table (PHYSDESC)

A list of all physical components that may be present in a waste container is maintained by this entity.

Physical Description	*PDESC_DESCR	CHAR(30)
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Package Status Table (PKGSTAT)

A table defining the various status codes which may be associated with a package during its existence, the edits which must be passed for other data about the package, and who owns the data.

Package Status	*PKS STATUS	CHAR(1)
Package Status Description	PKS_DESCR	CHAR(60)
Package Status Edit	PKS_EDIT	CHAR(1)
Package Owner	PKS_OWNER	CHAR(3)

Primary Waste Type Code Table (PRIWASTYPE)

The entity identifies a particular grouping of waste types that are considered as primary to a particular container which includes radioactive waste.

Primary Waste Type Code	*PWTP_CD	CHAR(2)
Primary Waste Type Description.	PWTP_DESCR	CHAR(20)

Primary Waste Type Hazardous	PWTYP_HAZ	CHAR(1)
Primary Waste Type Ship Time	PWTYP_SHIP_TIME	NUM(3)
Primary Waste Type Radioactive	PWTYP_RAD	CHAR(1)

Procedure Access Table (PROCACC)

This entity restricts access to certain procedures to specified users.

Procedure Access User ID	*PRAC_USERID	CHAR(7)
Procedure Access Procedure	*PRAC_PROC	CHAR(8)

Generator Assay Profile Table (PROFILE) - New Data Table

Profile ID	*PROF_ID	NUM(3)
Profile Description	PROF_DESCR	CHAR(50)
Profile PU239	PROF_PU239	FLOAT2
Profile Date	PROF_DT	DATE

Profile Isotopic Table (PROFILEISO) - New Data Table

Profile Isotopic Profile ID	*PISO_PROF_ID	NUM(3)
Profile Isotopic Name	*PISO_ISO_NAME	CHAR(8)
Profile Relative Abundance	PISO_RABUND	FLOAT
Profile Relative Abundance TMU	PISO_TMU	FLOAT

Report Table (REPORTABLE)

This entity supports the report preparation activity.

Report Table Name	*RPT_NAME	CHAR(8)
Report Table Title	RPT_TITLE	CHAR(40)
Report Table Select	RPT_SELECT	CHAR(8)
Report Table Timing	RPT_TIMING	CHAR(1)
Report Table Generator Specific	RPT_GENSPEC	CHAR(1)

Role Table (ROLE)

The list of roles to which users may be assigned, such as Generator.

Role Code	*ROLE_CD	CHAR(3)
Role Description	ROLE_DESCR	CHAR(60)

Route Description Table (ROUTE) - New Data Table

Route Code	*ROUTE_CD	CHAR(4)
Route Description	ROUTE_DESCR	CHAR(25)

Security Table (SECURITY)

This entity identifies the specific tables and actions within the database system that are accessible to a specific user.

Security User ID	*SEC_USERID	CHAR(7)
Security Table	*SEC_TABLE	CHAR(20)
Security Privilege	*SEC_PRIVILEGE	CHAR(10)

Secondary Waste Type Code Table (SECWASTYPE)

The occurrences of this entity define the particular kind of waste in a container.

Secondary Waste Type Code	*SWTYP_CD	CHAR(2)
Secondary Waste Type Group	SWTYP_GROUP	CHAR(3)
Secondary Waste Type Description	SWTYP_DESCR	CHAR(50)

Shipment List Description Table (SHIPLIST) - New Data Table

Table is used to identify shipments within WRAP.

Shipment List Number	*SHIPLIST_NUM	CHAR(6)
Shipment List Description	SHIPLIST_DESCR	CHAR(25)

SIE Isotopic Name Table (SIEISO) - New Data Table

SIE Isotopic Name	*SIE_ISO_NAME	CHAR(8)
SIE Isotopic Number	SIE_ISO_NUM	NUM(3)

State Table (STATE)

This table identifies all states involved with the generation, transportation, or disposition of waste tracked by the SWITS system.

State Code	*STATE_CD	CHAR(2)
State Name	STATE_NAME	CHAR(15)

Storage Category Table (STORAGECAT)

Each waste container is assigned a specific storage category that groups the types of waste stored within the container. This entity identifies each possible category.

Storage Category Code.	*SCAT_CD	CHAR(3)
Storage Category	SCAT_CATEGORY	CHAR(20)

System Bulletins (SYSBULL)

The entity identifies system bulletins that are available to the functional users of the system to keep them informed of system status and upgrades.

System Bulletins Date	*BUL_DT	DATE
System Bulletins Text	BUL_TEXT	LONG

Treatment Procedure (TREATPROC) - New Data Table

This record provides a description of the WRAP 1 treatment procedure for waste in the RWM gloveboxes.

Treatment Procedure Number	*TREAT_PROC_NUM	CHAR(14)
Treatment Procedure Revision Number	*TREAT_PROC_REV_NUM	CHAR(4)
Treatment Procedure Description	TREAT_PROC_DESCR	CHAR(30)
Treatment Procedure Expiration Date	TREAT_PROC_EXP_DT	DATE
Treatment Procedure Author	TREAT_PROC_AUTHOR	CHAR(30)

TRU Container Code Table (TRUCON) - New Data Table

TRU container type code	*TRU_CON_CD	CHAR(6)
TRU container type description	TRU_CON_CD_DESCR	CHAR(90)

TSD Facility Table (TSDFACIL)

This table identifies the treatment, storage, and disposal facilities involved with storage and disposition of waste tracked by SWITS.

TSD Facility ID	•*TFAC FACIL ID	CHAR(11)
TSD Manifest Address	TFAC_MFST_ADDR	CHAR(40)
TSD Scheduler	•TFAC_SCHEDULER	CHAR(6)
TSD Supervisor	•TFAC_SUPERVISOR	CHAR(6)

Container Use Code Table (USECODE) - New Data Table

Container Use Code	*USE_CD	CHAR(2)
Container Use Code Description	USE_CD_DESC	CHAR(50)

WRAP Role Table (WRAPROLE)

This table is used to define WRAP user roles.

WRAP Role User Id	•*WRL_USERID	CHAR(7)
WRAP Role Code	•*WRL_ROLE_CD	CHAR(3)
WRAP Signature Password	*WRL_SIG_PSWD	CHAR(8)

User Table (USERS)

Each functional, system manager, and developer user of SWITS is maintained by occurrences of this entity.

User Id		
*USR_USERID		CHAR(7)
User Account	USR_ACCOUNT	CHAR(6)
User Bulletin Date	USR_BULL_DT	DATE
User Logon Date	USR_LOGON_DT	DATE
User Name	USR_NAME	CHAR(20)
User Organization	USR_ORG	CHAR(5)
User Person Id	•USR_PERS ID	CHAR(6)
User Print Deliver To	USR_PR_DELIVER	CHAR(20)
User Printed Where	USR_PR_WHERE	CHAR(8)
User Term Type	USR_TERM_TYPE	CHAR(6)
User Train Date	USR_TRAIN_DT	DATE

WRAP Miscellaneous Table (WRAPMISC) - New Data Table

This table will contain miscellaneous values to be used during setup or processing of the WRAP 1 DMS.

WRAP Field Name	*WRAP_FIELD_NAME	CHAR(24)
WRAP Value	*WRAP_CODE_VALUE	CHAR(12)
WRAP Description	WRAP_CODE_DESCR	CHAR(70)

C.2 DMS DATA ELEMENT DESCRIPTIONS

Section C.2 provides descriptions for each of the data elements in the DMS database. This section follows the same alphabetical data record organization and sequence as Section C.1.

C.2.1 Data Record Tables Element Descriptions

Activity Comment Record (ACTCOM) - New Data Record

*ACT_PKG_ID	CHAR(14)	Activity Comment Package ID Associates the activity comments with a particular PIN.
•ACT_OP_ID	CHAR(8)	Activity Comment Operator ID Identifier of person performing a specific activity in WRAP Module 1 such as NDE, NDA, packaging the waste, sampling, or treating.
ACT_OP_COMMENT	CHAR(255)	Activity Comment Operator Comments Comments generated by an operator during receipt inspection, assay, examination, treatment, or repackaging waste (multiple occurrences).
*ACT_OP_ACTIVITY_CD	CHAR(3)	Activity Comment Activity Code Type of activity that comments were made against which includes receipt inspection, assay, examination, treatment, or repackaging.
ACT_DT	DATE	Activity Date Date of activity comment.
<u>Applicable MSDS (APPMSDS)</u> *APP_PKG_ID	CHAR(14)	Applicable Package ID Number Package ID associated to an Material Safety Data Sheet (MSDS) Domain: Alphanumeric.
•*APP_MSDS	CHAR(6)	Applicable MSDS

The identifier of the applicable MSDS as described in the Material Safety Data Sheets table (MSDS).

Domain: Material Safety Data Sheet Table (MSDS) MSDS_ID.

Bin List (BIN) - New Data Record

*BIN_NUM CHAR(3)

Bin Number

The bin location returned from the AS/RS when a pallet is put into storage.

Domain: Alphanumeric

BIN_CONTENT_NUM NUMBER(2)

Bin Content Number of Drums

The number of drums on this pallet. The number has to be 4 or less.

Domain: Numeric ≤ 4

*BIN_PKG_ID_1 CHAR(14)

Bin Package ID #1

The package ID of one of the drums on the pallet.

Domain: Alphanumeric

*BIN_PKG_ID_2 CHAR(14)

Bin Package ID #2

The package ID of one of the drums on the pallet.

Domain: Alphanumeric

*BIN_PKG_ID_3 CHAR(14)

Bin Package ID #3

The package ID of one of the drums on the pallet.

Domain: Alphanumeric

*BIN_PKG_ID_4 CHAR(14)

Bin Package ID #4

The package ID of one of the drums on the pallet.

Domain: Alphanumeric

Hazardous Chemical Component Record (CHEMCOMP)

•*HAZ_PKG_ID	CHAR(14)	Hazardous Package ID
		The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste.
		Domain: Alphanumeric.
•*HAZ_COMP_ID	CHAR(12)	Hazardous Chemical Component ID
		Unique identification of a hazardous chemical component. The hazardous chemical ID must be in the HAZCOMP table.
		Domain: Hazardous Chemical Component Table (HAZCOMP) HCC_ID.
•*HAZ_COMP_TEXT	CHAR(70)	Hazardous Chemical Component Text
		The name of the hazardous chemical component.
		Domain: Hazardous Chemical Component Table (HAZCOMP) HCC_DESCR.
HAZ_COMP_PPM	CHAR(7)	Hazardous Chemical Component Parts Per Million
		The portion of the waste in a container of a chemical component such as heavy metal, polychlorinated biphenyl, etc.
		Domain: Alphanumeric. Units are parts per million (PPM).
HAZ_COMP_WGT	NUMBER(12,4)	Hazardous Chemical Component Weight
		The weight of a hazardous chemical component found in a specific waste container.
		Domain: Numeric. Must be > 0. Units are kilograms.

HAZ_COMP_WGT_PCT CHAR(7) Hazardous Chemical Component Weight Percent

The percent by weight of a component. Relates to container Waste Weight (CON_WASTE_WGT).

Domain: Alphanumeric.

HAZ_EPCRA_FLAG CHAR(1) Hazardous Chemical Component Emergency Planning and Community Right-to-know Act (EPCRA) Flag

Flag indicating that this waste is reportable according to EPCRA, also known as, Title III of Superfund Amendments Reauthorization Act (SARA).

Domain: 'Y', 'N', or null.

Chain of Custody (COC) - New Data Record NORMALIZE

*COC_SAMPLE_ID CHAR(12) COC Sample ID Number

The ID of the sample itself.

COC_LOCATION CHAR(10) COC Sampling Location

Location where the sample was taken.

COC_CHEST_ID CHAR(11) COC Ice Chest ID Number

Identification number of the ice chest used to ship samples to the laboratory.

COC_PROJ_DESGN CHAR(25) COC Project Designation

Project designation for the sampling activities.

COC_TEMP NUMBER(2) COC Temperature Sample Taken At

Temperature at which the sample was taken.

COC_PRESERVATION CHAR(20) COC Preservation

Any material or chemicals used to preserve the samples.

COC_CNTYP_CD CHAR(2) COC Container Type Code

Field Name	Field Type	Description
COC_TOT_NUM_CONTR	NUMBER(2)	Type of container used to collect the sample. COC Total Number of Containers Total number of containers used for each sample.
COC_VOL	NUMBER(3)	COC Sample Volume Total volume of the sample.
COC_SAMPLE_MTRX	CHAR(100)	COC Sample Matrix Description of the sample matrix.
COC_SPEC_INSTRUCTION	CHAR(255)	COC Special Instructions Special instructions pertaining to the sample.
COC_SPEC_HANDLING	CHAR(255)	COC Special Handling/or Storage Special handling instructions for the samples.
COC_HAZ_REMARKS	CHAR(255)	COC Possible Sample Haz/Remarks Remarks or comments describing any hazardous conditions pertaining to the samples.
COC_PERS_NAME	CHAR(20)	COC Company Contact Name of the facility point of contact pertaining to the samples.
COC_PERS_PHONE	CHAR(12)	COC Telephone Number Phone number of the facility point of contact pertaining to the samples.
COC_METH_SHIPMENT	CHAR(20)	COC Method of Shipment Method used to ship the samples to the laboratory.
COC_BILL_LADING	NUMBER(25)	COC Bill of Lading/Air Bill # The bill of lading number for the samples shipped to the laboratory.

COC_SAF_NUM	NUMBER(10)	COC SAF # Unique number provided by HSAM to track samples.
COC_PROPERTY_NUM	NUMBER(14)	COC Offsite Property Number Any other property numbers that need to be tracked along with the sample numbers.
COC_TURN_AROUND	CHAR(10)	COC Data Turnaround Turn-around time that a laboratory expected to return the analysis results on samples.

Container Location (CONLOC) - New Data Record

*CONLOC_PKG_ID	CHAR(14)	Container Package ID The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste. Domain: Alphanumeric.
CONLOC_DT	DATE	Container Location Date Date and time that the waste container was moved to the current location. Domain: Oracle format date.
*CONLOC_LOCN_ID	CHAR(10)	Container Location ID Name of a location within WRAP Module 1 where waste item or empty drum is stored or processed. Domain: LOCATION Table LOCN_ID.

Container Relationship Record (CONREL)

*CONR_FROM_PKG_ID	CHAR(14)	Container Relationship From Package ID The package ID from which the contents were moved. Must match a
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		package ID in the Container and Content Record (CON_PKG_ID).
		Domain: Alphanumeric.
*CONR_TO_PKG_ID	CHAR(14)	Container Relationship To Package ID
		The package ID the contents were moved to. Must match a package ID in the Container and Content Record (CON_PKG_ID).
		Domain: Alphanumeric.
CONR_REL_CD	CHAR(1)	Container Relationship Code
		The relationship between the two containers.
		Domain:
		'C' = Combine (the contents of several containers being placed into one)
		'O' = Overpack (a container and its contents being placed in another container)
		'S' = Split (the contents of one container being distributed to several others).
CONR_DT	DATE	Container Relationship Date
		The date the repackaging took place.
		Domain: Oracle format date.

Container Treatment (CONTREAT) - New Data Record

*CONTREAT_PKG_ID	CHAR(14)	Container Treatment Package ID
		The package ID of a container to be treated with the following treatment worksheet.
*CONTREAT_DT	DATE	Container Treatment Date
		Date that the treatment is performed on the container.
CONTREAT_WS_ID	CHAR(8)	Container Treatment Worksheet ID

		The worksheet ID that describes the treatment process to be performed.
CONTREAT_USER_ID	CHAR(7)	Container Treatment User ID
		User ID of the person performing the treatment process.
CONTREAT_COMMENT	CHAR(255)	Container Treatment Comments
		Comments by the user about the treatment process.

Discharge Conveyor List (DISCHARGE) - New Data Record

*DISCHARGE_SEQ_NUM	NUMBER(12)	Discharge Conveyor Sequence Number
		Record sequence number assigned by Oracle.
		Domain: Numeric ≤ 5

DISCHARGE_PKG_ID	CHAR(14)	Discharge Conveyor Package ID
		Package ID of a container on the discharge conveyor. Used to display the waste characteristics of the container to the user at the discharge conveyor to plan the makeup of the pallets to go into the AS/RS.
		Domain: Alphanumeric

Field Screening Record (FIELDSCRN) - New Data Record

*SCRN_PKG_ID	CHAR(14)	Field Screening Package ID The unique package identification number that is assigned to any inner waste container or other container used to collect or consolidate waste.
SCRN_DATE	DATE	Field Screening Date Date that the field screening took place.
SCRN_SCREEN_PH_MT	NUMBER(3,2)	Field Screening pH (Meter) The pH results obtained using a meter during field screening activities.
SCRN_SCREEN_PH_PAPER	NUMBER(2,1)	Field Screening pH (Paper) The pH results obtained using pH paper during field screening activities.

Hazardous Waste Container Detail Record (HAZDETAIL)

*HDET_PKG_ID	CHAR(14)	Hazardous Detail Package ID The unique package identification number assigned to a hazardous waste container package. Domain: Alphanumeric.
HDET_CNTR_STATUS	CHAR(2)	Hazardous Detail Container Status Status codes of an hazardous waste container. Domain: (CODECHECK) 'MT' = empty 'TR' = triple rinsed 'F' = full 'PF' = part full.
HDET_DESIG_CD	CHAR(3)	Hazardous Detail Designation Code The designation type applied to hazardous, mixed-radioactive and PCB waste in this waste package. Washington Administrative Code 173-303 provides the criteria for these solid waste types.

Domain: (CODECHECK)
'D' = dangerous waste
'E' = extremely hazardous waste
'RD' = radioactive dangerous waste
'RE' = radioactive extremely hazardous waste.

HDET_DW_NUM **CHAR(70)** **Hazardous Detail Dangerous Waste Number**

Provides a list of all the dangerous waste numbers applying to the waste in this package. This list contains 1 to 14 four-character dangerous waste numbers. Each set is separated by a single blank. Each set is validated to the dangerous waste numbers in the DWNUM table. These sets are automatically sorted into the proper order using the sort information in the DWNUM table.

Domain: Dangerous Waste Numbers Table (DWNUM) DW_NUM.

HDET_FLASHPOINT **CHAR(6)** **Hazardous Detail Flashpoint**

Description of flashpoint of the contents, necessary only for a flammable material. F will be used to indicate Fahrenheit and C to indicate Celsius.

Domain: Alphanumeric.

HDET_HAZPROP_CD **CHAR(6)** **Hazardous Detail Hazardous Property Codes**

Identifies the Hazardous property categories applicable to the waste in this container.

Domain: (CODECHECK)
'C' = corrosive
'E' = explosive
'I' = ignitable
'P' = persistent
'T' = toxic
'X' = carcinogenic.

HDET_IND_DOT_ID_NUM

CHAR(5)

Hazardous Detail Individual Dot ID Number

This field is used when a container has the option of being shipped separately. "Standard" Shipping information for groups of containers is stored in the shipping records.

DOT identification number for waste in this individual container. The DOT identification number assigned to hazardous materials is given in the 49 CFR table 172.101. The numbers prefixed with "UN" are appropriate for both international and domestic shipments. Those preceded by "NA" are not recognized for international shipments except to and from Canada.

Domain: Alphanumeric.

HDET_IND_NOS_DESCR

CHAR(60)

Hazardous Detail Individual Not Otherwise Specified Description

This field is used when a container has the option of being shipped separately. "Standard" shipping information for groups of containers is stored in the shipping records.

Text description of the two main hazardous components in the waste in this container. When waste is listed as Not Otherwise Specified (NOS), the two main hazardous components must be listed on the manifest. This field will be null if the shipping name HDET_DOT_ID_NUM doesn't indicate NOS.

Domain: Alphanumeric.

HDET_IND_SHIP_NAME

CHAR(80)

Hazardous Detail Individual Shipping Name

This field is used when a container has the option of being shipped separately. "Standard"

shipping information for groups of containers is stored in the shipping records.

Proper shipping name for waste in this container. All DOT hazardous materials have a proper shipping name. This name is found in 49 CFR 172.101. The DOT hazardous class, DOT identification number, DOT label, and the package Id are related to this proper shipping name.

Domain: Alphanumeric.

HDET_LANDBAN

CHAR(14)

Hazardous Detail Land Banned

Codes indicating whether the dangerous waste number of the waste associated with this hazardous, mixed-radioactive and PCB waste package is regulated as "Land Banned". These codes have a one-to-one relationship to the sets of dangerous waste numbers in HDET DW NUM. A Y or N must be assigned for each set of dangerous waste numbers. DW LANDBAN contains a Y for wastes that are land banned and a null for wastes that are sometimes land banned. In this detail record WMP must supply the Y or N for the wastes that are sometimes land banned.

Domain: Alphanumeric.

HDET_OTHER_LANDBAN_1

CHAR(8)

Hazardous Detail Other Land Banned 1

Codes indicating particular instances of waste without dangerous waste numbers associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned".

Domain: (CODECHECK)

HOC when HOC >= 1000 ppm
PCB when PCB >= 50 ppm
NICKEL when NI >= 134 ppm
THALLIUM when TI >= 130 ppm
PH<2 when pH <= 2 (liquid)

HDET_OTHER_LANDBAN_2	CHAR(8)	<p>PH>12 when pH >= 12.5 (liquid)</p> <p>Hazardous Detail Other Land Banned 2</p> <p>Codes indicating particular instances of waste without dangerous waste numbers associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned".</p>
		<p>Domain: (CODECHECK)</p> <p>HOC when HOC >= 1000 ppm</p> <p>PCB when PCB >= 50 ppm</p> <p>NICKEL when NI >= 134 ppm</p> <p>THALLIUM when TI >= 130 ppm</p> <p>PH<2 when pH <= 2 (liquid)</p> <p>PH>12 when pH >= 12.5 (liquid)</p>
HDET_OTHER_LANDBAN_3	CHAR(8)	<p>Hazardous Detail Other Land Banned 3</p> <p>Codes indicating particular instances of waste without dangerous waste numbers associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned".</p>
		<p>Domain: (CODECHECK)</p> <p>HOC when HOC >= 1000 ppm</p> <p>PCB when PCB >= 50 ppm</p> <p>NICKEL when NI >= 134 ppm</p> <p>THALLIUM when TI >= 130 ppm</p> <p>PH<2 when pH <= 2 (liquid)</p> <p>PH>12 when pH >= 12.5 (liquid)</p>
HDET_PH	CHAR(5)	<p>Hazardous Detail pH</p> <p>The pH of waste package content.</p> <p>Domain: Alphanumeric.</p>
•HDET_SCAT_CD	CHAR(3)	<p>Hazardous Detail Storage Category Code</p> <p>Code used to determine waste storage compatibility requirements.</p> <p>Domain: Storage Category Table (STORAGECAT) SCAT_CD.</p>

HDET_PCB_DESCR	CHAR(40)	Hazardous Detail PCB Description
		Standard description of PCB contents valid for PCB wastes only. Validated against the miscellaneous codes table.
		Domain: Miscellaneous Code Table (CODECHECK) CODE_FIELD_NAME = PCB_DESCR
HDET_PCB_PPM	CHAR(6)	Hazardous Detail PCB Parts Per Million
		Concentration of PCB material.
		Domain: (CODECHECK) '<2', '2-49', '50-499', '>499'.
HDET_PCB_REMOVED_DT	DATE	Hazardous Detail PCB Removed Date
		Date PCB item was removed from service and became PCB waste.
		Domain: Oracle format date or null.
HDET_PCB_TYPE	CHAR(1)	Hazardous Detail PCB Type
		One character code defining the type of PCB item.
		Domain: (CODECHECK) 'A' = Article 'C' = Container 'R' = Article container
HDET_PCB_SUBTYPE	CHAR(1)	Hazardous Detail PCB Sub-Type
		Storage category code for hazardous, mixed-radioactive and PCB solid waste. One character code defining the PCB according to sub-type.
		Domain: (CODECHECK) 'C' = Container 'E' = Contaminated Electrical Equipment (50-499 ppm) 'P' = Capacitor 'Q' = Contaminated Electrical Equipment (\geq 500 ppm) 'R' = Article Container 'S' = Submarine Reactor Compartment

'T' = Transformer.

HDET_PCB_WGT **NUMBER(12,4)** **Hazardous Detail PCB Weight**
 The weight of PCBs in the waste package.
 Domain: Numeric. Units are kilograms.

HDET_WASTE_VOL **NUMBER(10,4)** **Hazardous Detail Waste Volume**
 The actual volume of the hazardous waste as opposed to the container volume. This value is less than or equal to the container volume.
 Domain: Numeric. Units are liters.

HDET_WASTE_STATUS **CHAR(2)** **Hazardous Detail Waste Status**
 Status code identifying waste origin.
 Domain:
 'S' = spilled
 'U' = used
 'O' = old but not used
 'R' = reacted
 Combinations: SU, SO, SR, RU, RO.

Radioactive Isotope Quantity Record (ISOQTY)

***RAD_PKG_ID** **CHAR(14)** **Radioactive Package ID**
 The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste.

Domain: Alphanumeric.

***RAD_ISO_NUM** **NUMBER(3)** **Radioactive Isotope Number**
 Code arbitrarily assigned for solid waste to identify a specific isotope or entity reported as an isotope, such as mixed fission products, Co-60, Sr-90, etc.
 Domain: Isotope Table (ISOTOPE) ISO_NUM.

RAD_ALPHA_CI	FLOAT	Radioactive Alpha CI
		Alpha emission of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.
		Domain: Numeric. Must be ≥ 0 . Units are alpha curies.
RAD_PE_CI	FLOAT	Radioactive PE CI
		Plutonium equivalent curies of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.
		Domain: Numeric. Must be ≥ 0 . Units are plutonium equivalent curies.
RAD_PU_FGE	FLOAT	Radioactive PU FGE
		Plutonium 239 fissile gram equivalent of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.
		Domain: Numeric. Must be ≥ 0 . Units are Plutonium 239 fissile gram equivalents.
RAD_QTY	FLOAT	Radioactive Quantity
		The quantity of a radioactive isotope in the container.
		Domain: Numeric. Must be ≥ 0 . Units are grams or curies as defined in the Isotope Table for that isotope (ISO_UNIT).
RAD_UNKNOWN	FLOAT	Radioactive Unknown
		The curie amount of unknown constituents in the package. This is calculated only for Isotope 19, Mixed Fission/Activation Products. The individual isotopes RAD_QTY with an ISO_UNIT of 'CI' is summed, then subtracted from the RAD_QTY of RAD ISO NUM 19. The remainder is RAD_UNKNOWN.

Domain: Numeric. Must be ≥ 0 .
Units are curies.

Manifest Record (SWIR330)

*MFST_NUM

CHAR(10)

Manifest Number

A unique identifier for a uniform hazardous waste manifest form consisting of a five-digit number. The manifest is used for hazardous waste, radioactive mixed waste, and PCB contaminated waste. For the purpose of recording movement of radioactive waste, where no manifest is used, the RSR number will be used instead.

MFST_ITEM_NUM

CHAR(4)

Manifest Item Number

Identifies the page number and letter for a specific line on a uniform hazardous waste manifest (e.g., 1A, 1B, etc.).

MFST_BAN_DW_NUM

CHAR(100)

Manifest Landbanned Dangerous Waste Numbers

List of dangerous waste numbers that are landbanned.

MFST_PKG_IDS

CHAR(254)

Manifest Package ID Numbers

Unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste.

Material Record (MATPACK) - New Data Record

*MAT_PKG_ID

CHAR(14)

Material Package ID

The unique package identification number that is assigned to the waste packet. The number is assigned by the waste generator and is used for tracking all waste packets overpacked in transfer drums.

Domain: Alphanumeric

***MAT_GRP_CD** **CHAR(2)** **Material Group Code**

This unique code is used to identify the WRAP 1 specific waste components for packets

Domain: MATL Table

Message Log Record (MSGLOG) - New Data Record

MSGLOG_GEN_TYPE **CHAR(8)** **Message Log General Type**

Specifies the systems that are communicating during the message transmittal.

Domain: DMSPCS, PCSDMS, SIEDMS, DMSSIE, BWASDMS, DMSBWA, PCSRDMS, DMSRSIE, DMSRBWA.

MSGLOG_SPEC_TYPE **CHAR(4)** **Message Log Specific Type**

Specifies the type of message that is being transmitted

Domain: ACC, ADDT, BAA, BAC, BAS, CDBI, CL, CLW, CRIT, DCS, DD, FCL, FML, LSPL, NCIP, NCIT, NLLL, OCW, OWEL, PAMR, POPD, PPL, PPLI, PPTP, PWA, RBWA, RCDB, RDMS, REMT, RESS, RID, RPCS, RSIE, RWPP, RWPT, SBWA, SDG, SDMS, SDP, SPCS, SPDP, SPP, SSIE, TAPL, TCIC, TCLD, TCPL, TRSP, TSPL.

*** MSGLOG_DT** **DATE** **Message Log Date**

The date and time that the message was logged.

Domain: Oracle format date

MSGLOG_STRING_1 **CHAR(2000)** **Message Log String - ASCII**

The contents of the message received from the PCS, SIE, or BWAS. Converted to ASCII character format. The fields delimited by the tilde (~) character.

Domain: Not Applicable.

MSGLOG_STRING_2	LONG	Message Log String - HEX The contents of the message received from the PCS, SIE, or BWAS in HEX format. Domain: Not Applicable.
MSGLOG_ERROR_FLAG	CHAR(2)	Message Log Error Flag TRUE to indicate if any errors were found during receipt or transmittal of message. Domain: 'Y', 'N', or Null.
MSGLOG_INIT_FLAG	CHAR(2)	Message Log Initialization Flag to indicate DMS internal source and destination of the messages Domain: FD = Form to DMSCOM DF = DMSCOM to Form DT = DMSCOM to Trigger or Procedure TD = Trigger to DMSCOM Null = To or From External System
MSGLOG_SEQ_NUM	CHAR(4)	Message Log Number The sequential message log number. Domain: Whole number.
<u>NDA Assay Results</u> (NDA) - New Data Record		
*NDA_PKG_ID	CHAR(14)	NDA Package ID Package ID associated with the NDE results in the message from the SIE.
NDA_DT	DATE	NDA Date Date the drum database message was sent to the SIE.
NDA_PROF_ID	CHAR(6)	NDA Profile ID The profile ID sent to the SIE for this assay.

NDA_PROF_FLAG	CHAR(1)	NDA Profile Flag The profile flag indicates whether this was default data (T) or characterization data (F).
NDA_MSG_DT	DATE	NDA Message Date Date of assay in the message from the SIE.
NDA_RVST_FLAG	CHAR(1)	NDA Revisit Flag The revisit flag
NDA_CONFIDENCE_CHK	CHAR(1)	NDA Confidence Check The confidence flag is true (T) if the checks indicate discrepancies between declared and measured ratios and is false (F) if no discrepancy is identified.
NDA_SWTYP_GROUP	CHAR(3)	NDA Secondary Waste Type Group The secondary waste type group code, LLW or TRU, returned in the SIE message.
NDA_WASTE_CAT	CHAR(2)	NDA Waste Category The LLW waste category, 1, 3, or >3, returned in the message from the SIE.
NDA_RATIO	FLOAT	NDA Ratio (PU239/PU240) The Pu239/Pu240 ratio returned in the SIE message.
NDA_TOT_PU_CI	FLOAT	NDA Total PU Ci The total Pu equivalent Curies reported in the message from the SIE.
NDA_TMU_PU_CI	FLOAT	NDA Total PU Ci TMU The total Pu equivalent Curies Total Measurement Uncertainty reported in the message from the SIE.

NDA_TOT_PU_FGE	FLOAT	NDA Total PU FGE The total Pu239 fissile gram equivalent reported in the message from the SIE.
NDA_TMU_PU_FGE	FLOAT	NDA Total PU FGE TMU The total Pu239 fissile gram equivalent Total Measurement Uncertainty reported in the message from the SIE.
NDA_TOT_ALPHA_CI	FLOAT	NDA Total Alpha Ci Total alpha curies reported in the message from the SIE.
NDA_TMU_ALPHA_CI	FLOAT	NDA Total Alpha Ci TMU Total alpha curies Total Measurement Uncertainty reported in the message from the SIE.
NDA_DECAY_HEAT	FLOAT	NDA Decay Heat Decay heat in watts as reported in the message from the SIE. It will be converted from watts to watts/ft ³ before storing in RDET_THERMAL_POWER.
NDA_TMU_DECAY_HEAT	FLOAT	NDA Decay Heat TMU Decay heat Total Measurement Uncertainty as reported in the message from the SIE>
NDA_ISO_TOT	NUMBER(3)	NDA Number of ISO Records The number of Isotopic records to follow in this message from the SIE.
NDA_NONLISTED_FLAG	CHAR(1)	NDA Non-listed Long-lived Nuclides Flag This flag is set to true (T) if the NLLL message is received from the SIE.

<u>NDA Assay Isotopic Records</u> (NDAISO) - New Data Record		
*NDAISO_PKG_ID	CHAR(14)	NDA Isotopic Package ID Package ID associated with the NDE results in the message from the SIE.
*NDAISO_NAME	CHAR(8)	NDA Isotopic Name The radionuclide name as reported in the message from the SIE. This name should match a name in the SIEISO table.
NDAISO_DT	DATE	NDA Isotopic Date The date that the message is received from the SIE.
NDAISO_QTY	FLOAT	NDA Isotopic Quantity The radionuclide quantity detected in Curies for fission and active products and grams for actinides as reported in the message from the SIE.
NDAISO_TMU_QTY	FLOAT	NDA Isotopic Quantity TMU The radionuclide quantity Total Measurement Uncertainty as reported in the message from the SIE.
NDAISO_CONFIDENCE_CHECK	CHAR(2)	NDA Isotopic Measurement Confidence Check The radionuclide quantity confidence check, T, F or NA, as reported in the message from the SIE.
NDAISO_MEAS_STATUS	CHAR(3)	NDA Isotopic Measurement Status The isotopic measurement status, ACT for actual, LOD for limit of detection, or NP for not present, as reported in the message from the SIE.
NDAISO_PAN_ACTIVE	CHAR(2)	NDA Isotopic PAN Active Data Used The PAN active detector chain used or not, A, B, or NO, as reported in the message from the SIE.

NDAISO_PAN_PASSIVE	CHAR(2)	NDA Isotopic PAN Passive Data Used The PAN passive detector chain used or not, A, B, or NO, as reported in the message from the SIE.
NDAISO_GEA	CHAR(32)	NDA Isotopic GEA Data Used The source of the GEA data as reported in the message from the SIE.
<u>NDE Results (NDE) - New Data Record</u>		
*NDE_PKG_ID	CHAR(14)	NDE Results Package ID The package ID of the container being reviewed in the NDE vault.
*NDE_DATE	DATE	NDE Results Date The date the results were obtained from the NDE vault.
NDE_OPER_ID	CHAR(7)	NDE Operator ID The operator ID of the user gathering the NDE results.
NDE_COMMENTS	CHAR(255)	NDE Comments User comments about the container and its contents.
NDE_FAILED_FLAG	CHAR(1)	NDE Failed Flag This flag is set by the operator to true (T), if the container failed the comparison review of the contents description in CON_GENER_WASTE_DESCR.
NDE_VDISK_FILE	CHAR(5)	NDE Container Video Disk File The name of the file on the optical disk where a specific image of a waste container is recorded.
NDE_VDISK_NUM	NUMBER(5)	NDE Container Video Disk Number The number of the optical disc that is used to record container images.

NDE_VTAPE_NUM NUMBER(5) NDE Container Video Tape Number

The number identifying the VHS tape that is used to record a container image.

NDE_VTAPE_START CHAR(5) NDE Container Video Tape Start

The location on the VHS tape were a specific image of a waste container is recorded

NDE_VTAPE_STOR_LOCN CHAR(10) NDE Container Video Tape Storage Location

The location where the VHS tape with the nondestructive examination image is stored.

Isotopic Distribution (PAM) - New Data Record

*PAM_PKG_ID CHAR(14) PAM Package ID Number

Unique package identification number assigned to a packet removed from a waste package and requires further tracking.

PAM_QTY FLOAT PAM Gram Quantity

The amount of the PU-240 in the waste package. The units are in grams.

PAM_PU_FGE FLOAT PAM Plutonium 239 Fissile Gram Equivalent

Plutonium 239 fissile gram equivalent calculated using the quantity of Pu-240 identified for a given packet.

PAM_UNCERTAINTY FLOAT PAM Uncertainty

The uncertainty value associated with the packet assay.

Payload Container Certification Record (PAYLOAD) - New Data Record

*PAYLOAD_PKG_ID CHAR(14) Payload Package ID Number

The unique package identification number that is assigned to the outer waste package.

PAYLOAD_HEAT_LIMIT	FLOAT	<p>Payload Decay Heat Limit</p> <p>The allowable decay heat for a specific shipping category.</p>
*PAYLOAD_SHIP_CAT	CHAR(10)	<p>Payload Shipping Category</p> <p>The shipping category for a particular container content. Shipping categories are defined in the TRUCON document.</p>
PAYLOAD_SHIP_APP_FLAG	CHAR(1)	<p>Payload Approval to Ship</p> <p>Flag that identifies if a payload container has been approved for shipment.</p>
PAYLOAD_CNTR_CODE	CHAR(3)	<p>Payload Container Type</p> <p>The code for the various containers approved for shipment to WIPP.</p>
PAYLOAD_LINER	CHAR(8)	<p>Payload Liner Punctured/Filtered</p> <p>Identifies if the liner has been punctured or has a filter is in place in the liner. Will be identified as either "filter" or "puncture".</p>
PAYLOAD_FILTER_MODEL	CHAR(10)	<p>Payload Filter Model</p> <p>The model number of the filter used on the payload container.</p>
PAYLOAD_INSTALLED	CHAR(3)	<p>Payload Filter Installation</p> <p>Answered yes or no as to whether or not a filter is installed.</p>
PAYLOAD_GAS_GEN_RATE	NUMBER(3)	<p>Payload Gas Generation Rate</p> <p>Total gas generation rate measured in psig for a specific container.</p>
PAYLOAD_HYDROGEN_RATE	NUMBER(1)	<p>Payload Hydrogen Generation Rate</p> <p>Hydrogen gas generation rate measured in a percentage of payload and the package.</p>

PAYLOAD_VOC_CONC	NUMBER(3)	<p>Payload Flammable VOC Concentration</p> <p>Flammable volatile organic compound concentration measured in ppm for a specific container.</p>
PAYLOAD_WEIGHT_ERROR	NUMBER(10,2)	<p>Payload Container Weight Error</p> <p>The weight error value calculated for a specific payload container.</p>
PAYLOAD_DECAY_HEAT	FLOAT	<p>Payload Container Decay Heat</p> <p>The decay heat value for a specific container.</p>
PAYLOAD_HEAT_ERROR	FLOAT	<p>Payload Container Decay Heat Error</p> <p>The error value assigned for decay heat by shipping category.</p>
PAYLOAD_FISSILE_ERROR	FLOAT	<p>Payload Fissile Mass Error (2X)</p> <p>The assigned error value for the fissile mass of a payload container.</p>
PAYLOAD_CERT_OFFICIAL	CHAR(25)	<p>Payload Certification Official</p> <p>The name of the site transportation certification official assuring that the contents meet the requirements for shipment in a TRUPACT II cask and the payload is qualified for transport.</p>
PAYLOAD_CERT_DT	DATE	<p>Payload Certification Date</p> <p>Date that a payload has been certified for shipment to WIPP.</p>
PAYLOAD_ASSEMBLY_ID	CHAR(8)	<p>Payload Package Assembly ID</p> <p>The identification number for the package assembly that will be placed into a TRUPACT II cask. The numbering sequence order is the 2-letter site ID code, last 2 digits of the year, and 4-digit package assembly number.</p>

<u>Payload Assembly Certification Record (PAYLOADASBLY) - New Data Record</u>		
ASBLY_OCA_BODY_ID	CHAR(8)	Assembly TRUPACT OCA Body Number The identification number on the TRUPACT II OCA body.
ASBLY_OCA_LID_ID	CHAR(8)	Assembly TRUPACT OCA Lid Number The identification number on the TRUPACT II OCA lid.
*ASBLY_SHIPMENT_NO	CHAR(8)	Assembly Shipment Number The shipment number for waste going to WIPP. This numbering sequence is the 2-letter site code, last 2 digits of the year, and 4-digit shipment number.
*ASBLY_SHIP_CAT	CHAR(10)	Assembly Payload Shipping Category The shipping category for a particular container content. Shipping categories are defined in the TRUCON document.
ASBLY_SHIP_CAT_HEAT_LT	FLOAT	Assembly Decay Heat Limit - Ship Cat The allowable decay heat for a specific shipping category.
ASBLY_CONFIGURATION	CHAR(4)	Assembly Payload Configuration Payload container configuration which would be a drum, Standard Waste Box (SWB), or an overpack (ovpk).
ASBLY_WGT_TRUPACT	CHAR(10,2)	Assembly Weight of TRUPACT Total weight of the TRUPACT II shipping container.
ASBLY_DOSE_RATE	NUMBER(8,2)	Assembly Dose Rate - Pkg Neutron dose rate of the shipping container measured at the surface.
ASBLY_DOSE_RATE_2M	NUMBER(8,2)	Assembly Dose Rate at 2 Meters Neutron dose rate of the shipping container measured at 2 meters.

ASBLY_ICV_CLOSURE_DT	DATE	Assembly Date of ICV Closure The date the ICV is closed.
ASBLY_APPROVED_SHIP_FLAG	CHAR(1)	Assembly Approved for Shipment Flag Identifies that the TRUPACT II shipping container is ready to be shipped.
ASBLY_SHIPMENT_OFFICIAL	CHAR(25)	Assembly Shipment Certification Official Name of the officer assuring that the transportation requirements of the TRUPACT II safety analysis report are being meet.
ASBLY_CERT_DT	DATE	Assembly Shipment Certification Date Date that the TRUPACT II shipping container is certified to be shipped.
<u>Physical Component Record</u> (PHYSCOMP) •*PHYS_PKG_ID CHAR(14)		Physical Component Package ID The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste. Domain: Alphanumeric.
•*PHYS_COMP_DESCR	CHAR(30)	Physical Component Description The description of a physical component in radioactive or mixed waste. Descriptions include paper, plastic, rags, concrete, etc. Domain: Physical Component Description Table (PHYSDESC) PDESC_DESCR.
PHYS_COMP_VOL_PCT	NUMBER(6,3)	Physical Component Volume Percent Percent by volume of a physical (not hazardous) component found in

a specific waste container of radioactive or mixed waste.

Domain: Numeric. Must be between 0 and 100.

PHYS_COMP_WGT

NUMBER(8,2)

Physical Component Weight

Weight of a physical (not hazardous) component found in a specific waste container of radioactive or mixed waste.

Domain: Numeric. Units are kilograms.

Process List (PROCLIST) - New Data Record
 •*PROC_PKG_ID

CHAR(14)

Process List Package ID

The package ID to be retrieved from the AS/RS to be processed in list sequence.

Domain: Alphanumeric.

PROC_ROUTE_CD

CHAR(4)

Process List Route Code

The route this container is to take through the areas of the facility.

Domain: Route Table (ROUTE) ROUTE_CD.

PROC_SAMPLE_FLAG

CHAR(1)

Process List Sample Flag

Designates that a sample needs to be taken from this container.

Domain: 'Y', 'N', or null.

PROC_COMPLIANT_FLAG

CHAR(1)

Process List Compliant Flag

Identifies the container as being compliant.

Domain: 'Y', 'N', or null.

•PROC_PROF_ID

CHAR(6)

Process List Profile ID

Defines which profile is to be used by the NDA equipment.

		Domain: Profile Table (PROFILE) PROF_ID.
PROC_PCS_FLAG	CHAR(1)	Flag to designate containers to send to the PCS. Domain: 'Y', 'N', or null.
<u>Processing Add List</u> (PROCADD) - New Data Record		
•*PROCADD_PKG_ID	CHAR(14)	Process List Package ID The package ID to be retrieved from the AS/RS to be processed in list sequence. Domain: Alphanumeric.
PROCADD_ROUTE_CD	CHAR(4)	Process List Route Code The route this container is to take through the areas of the facility. Domain: Route Table (ROUTE) ROUTE_CD.
PROCADD_SAMPLE_FLAG	CHAR(1)	Process List Sample Flag Designates that a sample needs to be taken from this container. Domain: 'Y', 'N', or null.
PROCADD_COMPLIANT_FLAG	CHAR(1)	Process List Compliant Flag Identifies the container as being compliant. Domain: 'Y', 'N', or null.
•*PROCADD_PROF_ID	CHAR(6)	Process List Profile ID Defines which profile is to be used by the NDA equipment. Domain: Profile Table (PROFILE) PROF_ID.

<u>Radioactive Waste Container Detail Record</u> (RADDETAIL)		
•*RDET_PKG_ID	CHAR(14)	Radioactive Detail Package Id The unique package identification number that is assigned to the

outer waste package. The number is assigned by the waste generator and is used for tracking all waste.

Domain: Alphanumeric.

RDET_ASSAY_NUM CHAR(14) Radioactive Detail Assay Number

The number that identifies the results of an assay done on the package.

Domain: Alphanumeric.

RDET_BG_DOSE_RATE FLOAT Radioactive Detail Beta/Gamma Dose Rate

Dose rate of a container. The dose rate is measured at 1 cm for contact handled waste and 1 meter for remote handled waste.

Domain: Numeric. Must be ≥ 0 . Units are mrem/hr.

RDET_CERT_DT DATE Radioactive Detail Certification Date

Date that a waste container of transuranic waste was certified. The certification of each container's assay results is completed by the generator.

Domain: Oracle format date.

RDET_DE_CI_FLAG CHAR(1) Radioactive Detail Dose Equivalence Curie Flag

Used by SWE to identify specially packaged waste container(s) excluded from the DE-Ci sum for a facility.

Domain: 'Y', 'N', or null.

RDET_NEUT_DOSE_RATE NUMBER(8,2) Radioactive Detail Neutron Dose Rate

Neutron dose rate contributions for transuranic waste with greater than 20 mrem/hr shall be reported separately on the SWSR. The dose rate is measured at 1 cm for

contact handled waste and 1 m for remote handled waste.

Domain: Numeric. Must be ≥ 0 .
Units are mrem/hr.

RDET_ORGANIC_VOL_PCT NUMBER(3) Radioactive Detail Organic Volume Percent

The percentage by volume of organic material that is in the waste container. Organic material includes plastic, paper, cloth, wood, solvents, oils, and hydrocarbon diluents used in solvent extraction (e.g., hexone and normal paraffin hydrocarbon).

Domain: Numeric. Must be between 0 and 100.

RDET_ORGANIC_WGT NUMBER(8,2) Radioactive Detail Organic Weight

The total weight of the organic material in a waste container. Organic material includes plastic, paper, cloth, wood, solvents, oils, and hydrocarbon diluents used in solvent extraction (e.g., Hexone and normal paraffin hydrocarbon).

Domain: Numeric. Units are kilograms.

RDET_PDR_NUM CHAR(9) Radioactive Detail Property Disposal Request Number

Identification number from the Property Disposal Request used to remove equipment from the property accounting system.

Domain: Alphanumeric.

RDET_SDAR_APPRV_NUM CHAR(14) Radioactive Detail SDAR Approval Number

Identifies a number given to a specific Storage/Disposal Approval Record (SDAR). The number is used to track approval for the storage or disposal of radioactive waste.

Domain: Alphanumeric.

RDET_SEAL_NUM	CHAR(14)	<p>Radioactive Detail Seal Number</p> <p>The number assigned to the outer waste container seal.</p> <p>Domain: Alphanumeric.</p>
RDET_SWIMS_CD	CHAR(2)	<p>Radioactive Detail Solid Waste Information Management System Code</p> <p>These codes identify waste descriptions that are defined by the "Solid Waste Information Management System - SWIMS Users Manual," EG&G Idaho, Idaho National Engineering Laboratory (INEL).</p> <p>Domain: Miscellaneous Code Table (CODECHECK) CODE_FIELD_NAME = SWIMS_CD.</p>
•RDET_SWTYP_CD	CHAR(2)	<p>Radioactive Detail Secondary Waste Type Code.</p> <p>This code identifies the type of waste in a particular container or waste stream. This is used for radioactive or mixed waste only.</p> <p>Domain: Secondary Waste Type Code Table (SECWASTYPE) SWTYP_CD.</p>
•RDET_SWTYP_GROUP	CHAR(3)	<p>Radioactive Detail Secondary Waste Type Group</p> <p>This code identifies the waste group in a particular container or waste stream. This is used for radioactive or mixed waste only. Groups are Low-Level, Transuranic, Unsegregated, and High Level.</p> <p>Domain: Secondary Waste Type Code Table (SECWASTYPE) SWTYP_GROUP.</p>
RDET_THERMAL_POWER	FLOAT	<p>Radioactive Detail Thermal Power</p> <p>The thermal power generation of a specific radioactive waste package.</p> <p>Domain: Numeric. Must be ≥ 0. Units are watts per cubic foot.</p>

RDET_TOT_ALPHA_CI	FLOAT	<p>Radioactive Detail Total Alpha Ci</p> <p>Total alpha emission (in curies) of listed transuranic elements (isotopes) identified in the isotope table.</p> <p>Domain: Numeric. Must be ≥ 0. Units are grams.</p>
RDET_TOT_BG_CI	FLOAT	<p>Radioactive Detail Total Beta/Gamma Ci</p> <p>Total beta/gamma curies for the contents of a container. Differs from RDET_BG DOSE RATE in that the dose is reduced by the shielding properties of the container.</p> <p>Domain: Numeric. Must be ≥ 0. Units are beta/gamma curies.</p>
RDET_TOT_DE_CI	FLOAT	<p>Radioactive Detail Total Dose Equivalence Curie</p> <p>Contains the sum total dose equivalence for a given package.</p> <p>Domain: Numeric. Must be ≥ 0. Units are dose equivalent curies.</p>
RDET_TOT_PE_CI	FLOAT	<p>Radioactive Detail Total PE Ci</p> <p>Total plutonium equivalent curies of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.</p> <p>Domain: Numeric. Must be ≥ 0. Units are plutonium equivalent curies.</p>
RDET_TOT_PU_FGE	FLOAT	<p>Radioactive Detail Total PU FGE</p> <p>Total plutonium 239 fissile gram equivalent of listed transuranic elements (isotopes).</p> <p>Domain: Numeric. Must be ≥ 0. Units are fissile gram equivalents.</p>

RDET_VOID_CD	CHAR(6)	Radioactive Detail Void Code Code for approved void space filler material for radioactive waste container. By regulation there must be no free space in radioactive waste containers. Domain: Miscellaneous Code Table (CODECHECK) CODE_FIELD_NAME = VOID.
RDET_WASTE_CAT	CHAR(5)	Radioactive Detail Waste Category Waste Category of radioactive and mixed waste. Domain: 'WC1' = LLW Category 1 'WC3' = LLW Category 3 'GTWC3' = LLW Category >3.
RDET_WASTE_MAKEUP	CHAR(1)	Radioactive Detail Waste Makeup A code indicating whether unknown radioactive components should be considered MAP or MFP. Domain: 'A' = MAP 'F' = MFP.
RDET_WRAP_CAT	CHAR(2)	Radioactive Detail WRAP Category Description codes that define the waste that will be processed in the WRAP plant. When processing takes place, the predominant category will help determine the type of processing. One code is assigned per container. Domain: Miscellaneous Code Table (CODECHECK) CODE_FIELD_NAME = WRAP_CAT.

Radiologic Inventory (RADMAT) - New Data Record

*RADMAT_ID	CHAR(1)	Radiologic Inventory Area ID Identifies which area of the facility the Rad Total is being calculated for.
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Domain:
 'F' = Facility
 'T' = TRU Process Glovebox
 'R' = TRU RWM Glovebox

RADMAT_DESCR	CHAR(50)	Radiologic Inventory Area Description Description of the area of the facility the Rad Total is being calculated for.
RADMAT_LIMIT	FLOAT	Radiologic Inventory Area Limit Fissile Inventory Limit for the area referenced by this record. Domain: Numeric.
RADMAT_RAD_TOTAL	FLOAT	Radiologic Inventory Current Rad Total The current Rad total calculated for this area. Domain: Numeric.
RADMAT_DT	DATE	Radiologic Inventory Date & Time of calculation The date and time the current Rad total was calculated. Domain: Oracle format date.
RADMAT_GB_PKG_ID	CHAR(14)	Radiologic Inventory Glovebox Package ID The Package ID of the drum that exceeded the identified glovebox limit. Domain: Alphanumeric.
RADMAT_UNITS	CHAR(3)	Radiologic Inventory Units Identifies which units are used for this area's calculations. Domain: 'FGE' or 'Ci'

RADMAT_ALARM	CHAR(1)	Radiologic Inventory Area Alarm Flag Is set to yes (Y) if the Rad calculations for a given area exceeds the area limit.
<u>Receiving Display Record (RECDISP) - New Data Record</u>		
RECDISP_BLK_NUM	NUM(3)	Receiving Display Block Number Unique internal sequence number to record the shipment. Domain: Whole number.
RECDISP_PKG_ID	CHAR(14)	Receiving Display Package ID The list of package IDs on the receiving dock received from the PCS. This list will be used to resolve any differences between the DMS and SWITS. When the list is correct and the data downloaded from SWITS, this list will be sent to the PCS as the set of containers received. Domain: Alphanumeric.
RECDISP_INNER_PKG_ID	CHAR(14)	Receiving Display Inner Package ID PIN of a drum contained in an overpack drum. Domain: Alphanumeric.
<u>Sample Data Record (SAMPLE)</u>		
*SAM_SAMPLE_ID	CHAR(12)	Sample ID The ID of the sample itself.
SAM_CLOSED_FLAG	CHAR(1)	Sample Closed Flag Yes/no code indicating whether or not a sample is closed. Y = closed, meaning no more information is expected to be input.

SAM_COMMENTS	CHAR(255)	Sample Comments. General comments pertaining to a sample.
•SAM_LAB_ID	CHAR(11)	Sample Laboratory ID The identifier for the laboratory to which the sample is sent.
SAM_OK_AT_LAB	CHAR(1)	Sample OK at Laboratory Yes/no code to indicate whether a sample arrived at the laboratory intact.
SAM_RAD_REPORT_DT	DATE	Sample Radioactive Report Date Date the results of the radioactive determination are received from the on-site radiation laboratory.
SAM_REPORT_DT	DATE	Sample Report Date The date the analysis report is returned.
SAM_RETURN	CHAR(1)	Sample Returned Yes/no code to indicate whether a sample should be returned or not.
SAM_RETURN_DT	DATE	Sample Returned Date The date the sample itself is returned.
SAM_RETURN_TO_PKG	CHAR(1)	Sample Returned To Package Yes/no code indicating whether the sample has been returned or not.
•SAM_TAKEN_BY	CHAR(6)	Sample Taken By Identification of the person who took the sample.
SAM_TAKEN_DT	DATE	Sample Taken Date Date the sample was taken.

SAM_TOLAB_DT	DATE	Sample To Laboratory Date The date the sample is sent to the laboratory.
SAM_TO_RAD_LAB_DT	DATE	Sample To Radioactive Laboratory Date Date the sample was sent to the on-site radiation laboratory. This may be null if waste is already identified as non-radioactive. Any waste sent off-site must be sampled to non-radioactive.
SAM_FROM_OP_ID	CHAR(20)	Sample from Operator ID Name of person who handled and/or transferred a sample to someone else (multiple occurrences).
SAM_TO_OP_ID	CHAR(20)	Sample to Operator ID Name of the person who received or took custody of a sample from someone else (multiple occurrences).
SAM_TRANSFER_DATE	DATE	Sample Transfer Date Date that a sample transfer between two people was made (multiple occurrences).
<u>Sample Data Reference Record</u> (SAMPREF)		
•*SREF_SAMPLE_ID	CHAR(12)	Sample Reference Sample ID Sample identification code.
•*SREF_PKG_ID	CHAR(14)	Sample Reference Package ID Package identification code assigned to the outer waste package.
SREF_DATE	DATE	Sample Reference Date Date sample was taken.

Security Action Log (SECLOG)

SLOG_TIME	DATE	Security Action Log Time The time a transaction was made to the Security Table to grant or revoke a specific privilege.
SLOG_OP	CHAR(1)	Security Action Log Operation The operation: G for grant or R for revoke.
SLOG_USERID	CHAR(7)	Security Action Log User ID The user's UserID.
SLOG_TABLE	CHAR(20)	Security Action Log Table The table or view which the privilege applies to.
SLOG_PRIVILEGE	CHAR(10)	Security Action Log Privilege The privilege being granted or revoked, such as INSERT or DELETE.

Shipment History Record (SHIPHIST)

•*SHPHST_MFST_NUM	CHAR(10)	Shipment History Manifest Number A unique identifier for a uniform hazardous waste manifest form consisting of 5-digit number. The manifest is used for hazardous waste, radioactive mixed waste, and PCB contaminated waste.
•*SHPHST_ITEM_NUM	CHAR(4)	Shipment History Item Number This identifies the page number and letter for a specific line on a uniform hazardous waste manifest (e.g., 1A, 1B, etc.).
•*SHPHST_PKG_ID	CHAR(14)	Shipment History Package ID The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste.

SHPHST_NMIT_NUM	CHAR(10)	<p>Shipment History Nuclear Material Item Transfer Number</p> <p>The number assigned to the Nuclear Material Item Transfer (NMIT) form or the Shipping Receiving Report (SRR). These forms are submitted to WHC Safeguards and Security division to provide information to complete the DOE/NRC 741 form which is used to document all transactions and adjustments that affect the materials balance, material usage, and the preparation of inventory reports.</p>
SHPHST_RETURN	CHAR(1)	<p>Shipment History Return</p> <p>Flag showing that a package was returned to the generator and is no longer associated with the manifest.</p>
SHPHST_RSR_NUM	CHAR(10)	<p>Shipment History Radioactive Shipment Record Number</p> <p>This references the form number identified on the Radioactive Shipment Record (RSR). An RSR is required for all shipments of radioactive material, including radioactive waste on the hanford site. Although this form is not required by solid waste management, its number is tracked for information only.</p>
SHPHST_741_NUM	CHAR(11)	<p>Shipment History 741 Number</p> <p>The number assigned on a DOE/NRC 741 form, Nuclear Material Transaction report. This form is generated to document all transactions and adjustments that affect the materials balance, materials usage and preparation of inventory lists for all accountable nuclear material. The DOE/NRC 741 form is the official record for nuclear material accountability.</p>

Shipping Pick List (SHIPPICK) - New Data Record

*SHIPPICK_PKG_ID CHAR(14) Shipping Pick List Package ID
 The package ID assigned to this shipment number.
 Domain: Alphanumeric.

*SHIPPICK_SHIP_NUM CHAR(8) Shipping Pick List Shipment Number
 The shipment number assigned to this shipment pick list.
 Domain: Alphanumeric.

Shipment Item Record (SHIPITEM)

*SHPITM_MFST_NUM CHAR(10) Shipment Item Manifest Number
 A unique identifier for a uniform hazardous waste manifest form consisting of 5-digit number. The manifest is used for hazardous waste, radioactive mixed waste, and PCB contaminated waste.

*SHPITM_ITEM_NUM CHAR(4) Shipment Item Number
 This identifies the page number and letter for a specific line on a uniform hazardous waste manifest (e.g., 1A, 1B, etc.).

SHPITM_CNTR_COUNT NUMBER(3) Shipment Item Container Count
 Identifies the total number of individual containers in a particular line item on a uniform hazardous waste manifest.

SHPITM_DOT_HAZ_CLASS CHAR(20) Shipment Item DOT Hazardous Class
 Hazard Class as defined in 49 CFR, Hazardous Material Table; DOT hazard class tied to elements: shipment item dot number & name. Classes include flammable liquid, corrosive material, ORME, etc.

SHPITM_DOT_ID_NUM CHAR(6) Shipment Item DOT ID Number
 Identifies the proper DOT identification number for each waste. This ID is prefixed by either UN or NA. Tied to proper shipping name.

SHPITM_DOT_NAME	CHAR(100)	Shipment Item DOT Name
		The proper DOT shipping name assigned to a specific waste stream as identified in the code of federal regulations.
SHPITM_NOS_DESCR	CHAR(60)	Shipment Item Not Otherwise Specified Description
		Text description of the two main hazardous components in the waste associated with this item. This waste can be in multiple containers. When waste is listed as Not Otherwise Specified (NOS), the two main hazardous components must be listed on the manifest. This field will be null if the shipping name SHPITM_DOT_NAME doesn't indicate NOS. See HDET_IND_NOS_DESCR.
SHPITM_PROFILE_NUM	CHAR(10)	Shipment Item Profile Number
		"Waste Product Questionnaire" (WPQ). A reference number for a waste stream profile as required by the off-site disposal contractor. The WPQ is the contractor's form, and subject to change depending on contract assignment.
SHPITM_QTY_UNIT	CHAR(1)	Shipment Item Quantity Unit
		This code identifies the appropriate unit of measure for waste on a specific line on the uniform hazardous waste manifest. The codes include "G" for gallon, "P" for pounds, "T" for tons, "L" for liter, "K" for kilogram, "M" for metric ton, and "N" for cubic meter. These codes are defined in 49 CFR.
SHPITM_RQ_FLAG	CHAR(1)	Shipment Item Reportable Quantity Flag
		Yes/No flag indicating whether or not a reportable quantity exists. The details are contained in SHPITM_DOT_NAME, but this flag is used in manifest creation to add

"RQ" in a box before the proper shipping name. Yes - reportable quantity exists. No - quantity is not reportable.

SHPITM_TOT_QTY	NUMBER(12,4)	Shipment Item Total Quantity
		The total quantity of waste described on each line of the uniform hazardous waste manifest. Containers and inner liners are not considered part of the waste when measuring or calculating the quantity of dangerous waste.
SHPITM_TSD_PROCESS	CHAR(50)	Shipment Item TSD Process
		Handling codes and treatment method EPA code ID's, containment vessel and treatment. Codes include: S01C, S02T, T31T, D810, etc.
<u>Shipment Record (SHIPMENT)</u> *SHPMNT_MFST_NUM	CHAR(10)	Shipment Manifest Number
		A unique identifier for a uniform hazardous waste manifest form consisting of 5-digit number. The manifest is used for hazardous waste, radioactive mixed waste, and PCB contaminated waste. For the purpose of recording movement of radioactive waste, where no manifest is used, the RSR number will be used instead.
SHPMNT_CERT_DT	DATE	Shipment Certification Date
		The date that a qualified generator certifies that the contents of the waste shipment are fully and accurately described, packaged, marked, labeled, and are in all respects in proper condition for transport by highway according to all applicable regulations.
•SHPMNT_GGRP_ID	CHAR(8)	Shipment Group ID
		Identification of the generator group responsible for this shipment.

SHPMNT_MFST_RET_DT	DATE	Shipment Manifest Return Date The date the original manifest is returned to the Generator.
SHPMNT_MFST_TYPE_CD	CHAR(3)	Shipment Manifest Type Code The code which identifies whether or not a uniform hazardous waste manifest has been generated for onsite or offsite shipping of hazardous, mixed, or PCB waste. 0 for Onsite or F for Offsite.
•SHPMNT_OFFSITE_CMPNY_ID	CHAR(4)	Shipment Offsite Company ID Identifies the offsite company which disposes of the waste. For offsite manifests only.
•SHPMNT_OFFSITE_CMPNY_TYPE	CHAR(3)	Shipment Offsite Company Type Additional identifier of off-site company responsible for the storage/disposal of the waste in this shipment.
•SHPMNT_RECV_FACIL_ID	CHAR(11)	Shipment Receiving Facility ID Specific facility to which waste is shipped. For onsite manifests only.
SHPMNT_RSR_TYPE	CHAR(2)	Shipment Radioactive Shipment Record Type Identifies the source and destination of waste being shipped on an RSR. GT - generator to TSD; TG - TSD to generator; TT - TSD to TSD.
SHPMNT_SCHED_DT	DATE	Shipment Scheduled Date Shipping date scheduled for the shipment.
SHPMNT_SHIP_DT	DATE	Shipment Ship Date The date the shipment starts moving.

•SHPMNT_TRANSP_CMPNY_ID	CHAR(4)	Shipment Transportation Company ID Identifies the company which transports the waste. Typical codes are WHC, KEH, PNL, etc.
•SHPMNT_TRANSP_CMPNY_TYPE	CHAR(3)	Shipment Transportation Company Type Additional identifier of the company that transports the waste shipment.
SHPMNT_TSD_ACCEPT_DT	DATE	Shipment TSD Accept Date The date the shipment is accepted at a TSD facility.

TRUPACT Shipping Record (TRUPACT) - New Data Record

•*TRUPACT_PKG_ID	CHAR(14)	Package ID Number The unique package identification number that is assigned to the outer waste package.
TRUPACT_WAC_EXCEPT	CHAR(7)	WAC Exception Number The WIPP Waste Acceptance Criteria exception tracking number.
TRUPACT_ID	CHAR(3)	TRUPACT II Number The unique identification number assigned to each TRUPACT II shipping cask or other Type B shipping container.
TRUPACT_RECORD_TYPE	CHAR(1)	Record Type The code that identifies the type of record for a specific data package. Record types are "S" - shipment, "P" - package, "H" - hazardous, and "R" - radionuclide.
TRUPACT_SHIP_DATE	DATE	Actual Ship Date The actual ship date for a TRUPACT II cask.

TRUPACT Shipping Pick List (TRUPACTSHIPLIST) - New Data Record

*TRUPACTSL_PKG_ID	CHAR(14)	TRUPACT Shipping Pick List Package ID
		The package ID to be retrieved from the AS/RS to be assembled into the TRUPACT assemblies.
*TRUPACTSL_SHIPMENT_NUM	CHAR(8)	TRUPACT Shipping Pick List Shipment Num
		The TRUPACT shipment number that defines the shipment that this container belongs to.
TRUPACTSL_TIER	CHAR(1)	TRUPACT Shipping Pick List Tier
		The number, 1 or 2, that indicates which level or tier the drum will be placed on when the shipment is assembled.

Verification Data - Applicable MSDS Record (VERAPPMDS) - New Data Record

*VER_APP_PKG_ID	CHAR(14)	Package ID Number
		The unique package identification number that is assigned to the outer waste package.
*VER_APP_MSDS	CHAR(6)	Applicable MSDS
		The identifier of the applicable MSDS.
VER_APP_MSDS_FLAG	CHAR(1)	Applicable MSDS Flag
		Flag is manually entered when the MSDS used by WRAP Module 1 is found to be different than that used by the generator.

Verification Data - Hazardous Chemical Component Record (VERCHEMCOMP) - New Data Record

*VER_HAZ_COMP_PKG_ID	CHAR(14)	Verification Package ID Number
		The unique package identification number that is assigned to the outer waste package.

VER_HAZ_COMP_ID	CHAR(12)	Verification Hazardous Component ID WRAP Module 1 verified Hazardous Chemical Component Identification Source: Foreign key to HCC ID in the HAZCOMP table. Generator with hazardous Chemical composition information. (Hazardous Chemical Component Pop-up) LOV: HAZCOMP Table. Unique identification of a hazardous chemical component.
VER_HAZ_COMP_ID_FLAG	CHAR(1)	Verification Hazardous Component ID Flag Flag that is manually entered when the hazardous component ID identified in WRAP Module 1 is different than that identified by the generator.
VER_HAZ_COMP_TEXT	CHAR(70)	Verification Hazardous Component Text WRAP Module 1 verified name of the hazardous chemical component.
VER_HAZ_COMP_TEXT_FLAG	CHAR(1)	Verification Hazardous Component Text Flag Flag that is manually entered when the hazardous component text identified in WRAP Module 1 is different than that identified by the generator.
VER_HAZ_COMP_PPM	CHAR(7)	Verification Hazardous Component PPM WRAP Module 1 verified portion of the waste in a container, in parts per million (PPM), of a chemical component such as heavy metal, polychlorinated biphenyl, etc.
VER_HAZ_COMP_PPM_FLAG	CHAR(1)	Verification Hazardous Component PPM Flag Flag that is manually entered when the hazardous component PPM identified in WRAP Module 1 is

different than that identified by the generator.

VER_HAZ_COMP_WGT	NUMBER(12,4)	Verification Hazardous Component Weight WRAP Module 1 verified weight of a hazardous chemical component found in a specific radioactive waste container. Units are kilograms.
VER_HAZ_COMP_WGT_FLAG	CHAR(1)	Verification Hazardous Component Weight Flag Flag that is manually entered when the hazardous component weight identified in WRAP Module 1 is different than that identified by the generator.
VER_HAZ_COMP_WGT_PCT	CHAR(7)	Verification Hazardous Component Weight Percent WRAP Module 1 verified percent by weight of a component. Relates to CON_WASTE_WGT.
VER_HAZ_COMP_WGT_PCT_FLAG	CHAR(1)	Verification Hazardous Component Weight Percent Flag Flag that is manually entered when the hazardous component weight percent identified in WRAP Module 1 is different than that identified by the generator.

Verification Data - Radioactive Isotope Quantity Record (VERISOQTY) - New Data Record

.*VER_RAD_PKG_ID	CHAR(14)	Verification Radioactive Package ID The unique package identification number that is assigned to the outer waste package.
.*VER_RAD_ISO_NUM	NUMBER(3)	Verification Radioactive Isotope Number Code arbitrarily assigned for solid waste to identify a specific isotope or entity reported as an isotope, such as mixed fission products identified in WRAP Module 1.

VER_RAD_ISO_NUM_FLAG	CHAR(1)	<p>Verification Radioactive Isotopic Number Flag</p> <p>Automatically flags if the isotope numbers of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.</p>
VER_RAD_ALPHA_CI	FLOAT	<p>Verification Radioactive Alpha Ci</p> <p>WRAP Module 1 measured value of alpha emission (in curies) of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.</p>
VER_RAD_ALPHA_CI_FLAG	CHAR(1)	<p>Verification Radioactive Alpha Ci Flag</p> <p>Automatically flags if the alpha curies of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.</p>
VER_RAD_PE_CI	FLOAT	<p>Verification Radioactive PE Ci</p> <p>WRAP Module 1 measured value of plutonium equivalent curies of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.</p>
VER_RAD_PE_CI_FLAG	CHAR(1)	<p>Verification Radioactive PE Ci Flag</p> <p>Automatically flags if the plutonium equivalent curies of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.</p>
VER_RAD_PU_FGE	FLOAT	<p>Verification Radioactive PU FGE</p> <p>WRAP Module 1 measured value of plutonium 239 fissile gram equivalent of listed transuranic elements (isotopes) identified in</p>

the isotope table as being measured in grams.

VER_RAD_PU_FGE_FLAG CHAR(1) Verification Radioactive PU FGE Flag

Automatically flags if the plutonium 239 fissile gram equivalents of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.

VER_RAD_QTY FLOAT Verification Radioactive Quantity

WRAP Module 1 measured value of the quantity of a radioactive isotope in the container. Units are grams or curies as defined in the Isotope Table for that isotope.

VER_RAD_QTY_FLAG CHAR(1) Verification Radioactive Quantity Flag

Automatically flags if the gram or curie quantity of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.

Verification Data - Container and Content Record (VERWASTE) - New Data Record

***VER_PKG_ID** CHAR(14) Verification package ID number

The unique package identification number that is assigned to the outer waste package.

Domain: Alphanumeric.

VER_RDET_SWTYP_GROUP CHAR(3) Verification Secondary Waste Type Group

This code identifies the waste in a particular container or waste stream. This is used for radioactive or mixed waste only. Groups are Low-Level, Transuranic, Unsegregated, and High Level.

Domain: Secondary Waste Type Code Table (SECWASTYPE) SWTYP_GROUP

<p>VER_RDET_SWTYP_GROUP_FLAG CHAR(1)</p>	<p>Verification Secondary Waste Type Group Flag</p>
	<p>Automatically flags if the Secondary Waste Type Group does not match the Rad Detail Secondary Waste Type Group.</p>
	<p>Domain: "Y", "N" or null.</p>
<p>VER_RDET_THERMAL_POWER FLOAT</p>	<p>Verification content thermal power</p>
	<p>WRAP Module 1 measured value of thermal power generation of a specific radioactive waste package. Units are watts per cubic foot.</p>
	<p>Domain: Numeric. Must be ≥ 0. Units are watts per cubic foot.</p>
<p>VER_RDET_THERMAL_POWER_FLAG CHAR(1)</p>	<p>Verification thermal power flag</p>
	<p>Automatically flags if the thermal power of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.</p>
	<p>Domain: "Y", "N" or null.</p>
<p>VER_RDET_TOT_ALPHA_CI FLOAT</p>	<p>Verification total alpha Ci</p>
	<p>WRAP Module 1 measured value of total alpha emission (in curies) of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams.</p>
	<p>Domain: Numeric. Must be ≥ 0. Units are grams.</p>
<p>VER_RDET_TOT_ALPHA_CI_FLAG CHAR(1)</p>	<p>Verification total alpha Ci flag</p>
	<p>Automatically flags if the total alpha curie content of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.</p>
	<p>Domain: "Y", "N" or null.</p>

VER_RDET_TOT_BG_CI	FLOAT	Verification total beta/gamma Ci
		WRAP Module 1 measured value of total beta/gamma curies for the contents of a container. Differs from RDET_BG DOSE RATE in that the dose is reduced by the shielding properties of the container.
		Domain: Numeric. Must be ≥ 0 . Units are beta/gamma curies.
VER_RDET_TOT_BG_CI_FLAG	CHAR(1)	Verification total beta/gamma Ci flag
		Automatically flags if the total beta/gamma curie content of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.
		Domain: "Y", "N" or null.
VER_RDET_TOT_PE_CI	FLOAT	Verification total PE Ci
		WRAP Module 1 measured value of total plutonium equivalent curies of listed transuranic elements (isotopes) identified in the isotope table as being measured in grams. Rswims nqty of niso_no 46.
		Domain: Numeric. Must be ≥ 0 . Units are plutonium equivalent curies.
VER_RDET_TOT_PE_CI_FLAG	CHAR(1)	Verification total PE Ci flag
		Automatically flags if the total alpha curie content of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.
		Domain: "Y", "N" or null.
VER_RDET_TOT_PU_FGE	FLOAT	Verification total Pu FGE
		WRAP Module 1 measured value of total plutonium 239 fissile gram equivalent of listed transuranic elements (isotopes) which are

		identified in the isotope table as being measured in grams.
		Domain: Numeric. Must be ≥ 0 . Units are fissile gram equivalents.
VER_RDET_TOT_PU_FGE_FLAG	CHAR(1)	Verification total Pu FGE flag
		Automatically flags if the total plutonium 239 fissile gram equivalent of listed transuranic isotopes of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.
		Domain: "Y", "N" or null.
VER_RDET_WASTE_CAT	CHAR(5)	Verification Waste Category
		Waste Category of radioactive and mixed waste.
		Domain: 'WC1' = LLW Category 1 'WC3' = LLW Category 3 'GTWC3' = LLW Category >3.
VER_RDET_WASTE_CAT_FLAG	CHAR(1)	Verification Waste Category Flag
		Automatically flags if the Waste Category does not match the Rad Detail Waste Category.
		Domain: "Y", "N" or null.
VER_TOT_QTY_FLAG	CHAR(1)	Verification total quantity flag
		Automatically flags if the total curie or gram content of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.
		Domain: "Y", "N" or null.
VER_CON_GROSS_WGT	NUMBER(10,2)	Verification container gross weight
		WRAP Module 1 measured value of the gross weight of a waste container. It includes the weight

of the waste, of the container and of any shielding. Gross weight cannot exceed waste description weight plus container weight plus hazardous component weight.

Domain: Number. Units are kilograms.

VER_CON_GROSS_WGT_FLAG CHAR(1)

Verification container gross weight flag

Automatically flags if the total gross weight of the original generator data is outside the specified limits when compared to the verification data obtained in WRAP Module 1.

Domain: "Y", "N" or null.

VER_HDET_DESIG_CD CHAR(3)

Verification Hazardous Detail Designation Code

WRAP Module 1 verified designation type applied to hazardous, mixed-radioactive and PCB waste in this waste package. Washington Administrative Code 173-303 provides the criteria for these solid waste types.

Domain: (CODECHECK)
 'D' = dangerous waste
 'E' = extremely hazardous waste
 'RD' = radioactive dangerous waste
 'RE' = radioactive extremely hazardous waste.

VER_HDET_DESIG_CD_FLAG CHAR(1)

Verification Hazardous Detail Designation Code Flag

Flag that is manually entered when the designation code identified in WRAP Module 1 is different than that identified by the generator.

Domain: "Y", "N" or null.

VER_HDET_DW_NUM CHAR(70)

Verification Hazardous Detail Dangerous Waste Number

WRAP Module 1 verified list of all the dangerous waste numbers applying to the waste in this

package. This list contains 1 to 14, four character dangerous waste numbers. Each set is separated by a single blank. Each set is validated to the dangerous waste numbers in the DWNUM table. These sets are automatically sorted into the proper order using the sort information in the DWNUM table.

Domain: Dangerous Waste Numbers Table (DWNUM) DW_NUM.

VER_HDET_DW_NUM_FLAG CHAR(1)

Verification Hazardous Detail Dangerous Waste Number Flag

Flag that is manually entered when the dangerous waste numbers identified in WRAP Module 1 are different than that identified by the generator.

Domain: "Y", "N" or null.

VER_HDET_FLASHPOINT CHAR(6)

Verification Hazardous Detail Flashpoint

WRAP Module 1 verified description of flashpoint of the contents, necessary only for a flammable material. F will be used to indicate Fahrenheit and C to indicate Celsius.

Domain: Alphanumeric.

VER_HDET_FLASHPOINT_FLAG CHAR(1)

Verification Hazardous Detail Flashpoint Flag

Flag that is manually entered when the flashpoint identified in WRAP Module 1 is different than that identified by the generator.

Domain: "Y", "N" or null.

VER_HDET_HAZPROP_CD CHAR(6)

Verification Hazardous Detail Hazardous Property Code

WRAP Module 1 verified hazardous property categories applicable to the waste in this container. Hazardous property categories are:

Domain: (CODECHECK)

'C' = corrosive
 'E' = explosive
 'I' = ignitable
 'P' = persistent
 'T' = toxic
 'X' = carcinogenic.

VER_HDET_HAZPROP_CD_FLAG CHAR(1)

Verification Hazardous Detail
 Hazardous Property Code Flag

Flag that is manually entered when the hazardous property codes identified in WRAP Module 1 are different than that identified by the generator.

Domain: "Y", "N" or null.

VER_HDET_LANDBAN CHAR(14)

Verification Hazardous Detail Land
 Ban Codes by DW Number

WRAP Module 1 verified codes indicating whether the dangerous waste number of the waste associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned". These codes have a one-to-one relationship to the sets of dangerous waste numbers in HDET DW NUM. A Y or N must be assigned for each set of dangerous waste numbers. DW_LANDBAN contains a Y for wastes that are never land banned and a null for wastes that are sometimes land banned. In this detail record WMP must supply the Y or N for the wastes that are sometimes land banned.

Domain: Alphanumeric.

VER_HDET_LANDBAN_FLAG CHAR(1)

Verification Hazardous Detail Land
 Ban Codes by DW Number Flag

Flag that is manually entered when the landban codes identified in WRAP Module 1 are different than that identified by the generator.

Domain: "Y", "N" or null.

VER_HDET_OTHER_LANDBAN_1 CHAR(8)

Verification Hazardous Detail
 Other Land Ban Codes

WRAP Module 1 verified codes indicating particular instances of waste without dangerous waste numbers associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned".

Domain: (CODECHECK)
HOC when HOC \geq 1000 ppm
PCB when PCB \geq 50 ppm
NICKEL when NI \geq 134 ppm
THALLIUM when TI \geq 130 ppm
PH<2 when pH \leq 2 (liquid)
PH>12 when pH \geq 12.5 (liquid)

VER_OTHER_LANDBAN_1_FLAG CHAR(1)

Verification Hazardous Detail
Other Land Ban Codes Flag

Flag that is manually entered when the other landban codes identified in WRAP Module 1 are different than that identified by the generator.

Domain: "Y", "N" or null.

VER_HDET_OTHER_LANDBAN_2 CHAR(8)

Verification Hazardous Detail
Other Land Ban Codes 2

WRAP Module 1 verified codes indicating particular instances of waste without dangerous waste numbers associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned".

Domain: (CODECHECK)
HOC when HOC \geq 1000 ppm
PCB when PCB \geq 50 ppm
NICKEL when NI \geq 134 ppm
THALLIUM when TI \geq 130 ppm
PH<2 when pH \leq 2 (liquid)
PH>12 when pH \geq 12.5 (liquid)

VER_OTHER_LANDBAN_2_FLAG CHAR(1)

Verification Hazardous Detail
Other Land Ban Codes 2 Flag

Flag that is manually entered when the other landban codes identified in WRAP Module 1 are different than that identified by the generator.

VER_HDET_OTHER_LANDBAN_3	CHAR(8)	<p>Domain: "Y", "N" or null.</p> <p>Verification Hazardous Detail Other Land Ban Codes 3</p> <p>WRAP Module 1 verified codes indicating particular instances of waste without dangerous waste numbers associated with this hazardous, mixed-radioactive and PCB waste package that are regulated as "Land Banned".</p>
		<p>Domain: (CODECHECK)</p> <p>HOC when HOC >= 1000 ppm PCB when PCB >= 50 ppm NICKEL when NI >= 134 ppm THALLIUM when TI >= 130 ppm PH<2 when pH <= 2 (liquid) PH>12 when pH >= 12.5 (liquid)</p>
VER_OTHER_LANDBAN_3_FLAG	CHAR(1)	<p>Verification Hazardous Detail Other Land Ban Codes 3 Flag</p> <p>Flag that is manually entered when the other landban codes identified in WRAP Module 1 are different than that identified by the generator.</p>
		<p>Domain: "Y", "N" or null.</p>
VER_HDET_PH	CHAR(5)	<p>Verification Hazardous Detail pH</p> <p>WRAP Module 1 verified pH of waste package content.</p>
		<p>Domain: Alphanumeric.</p>
VER_HDET_PH_FLAG	CHAR(1)	<p>Verification Hazardous Detail pH Flag</p> <p>Flag that is manually entered when the pH measured in WRAP Module 1 is different than that identified by the generator.</p>
		<p>Domain: "Y", "N" or null.</p>
VER_HDET_PCB_DESCR	CHAR(40)	<p>Verification Hazardous Detail PCB Description</p> <p>WRAP Module 1 verified description of PCB contents valid for PCB</p>

		wastes only. Validated against the miscellaneous codes table.
		Domain: Miscellaneous Code Table (CODECHECK) CODE_FIELD_NAME = PCB_DESCR
VER_HDET_PCB_DESCR_FLAG	CHAR(1)	Verification Hazardous Detail PCB Description Flag
		Flag that is manually entered when the PCB description identified in WRAP Module 1 is different than that identified by the generator.
		Domain: "Y", "N" or null.
VER_HDET_PCB_PPM	CHAR(6)	Verification Hazardous Detail PCB Parts Per Million
		WRAP Module 1 verified concentration of PCB material.
		Domain: (CODECHECK) '<2', '2-49', '50-499', '>499'.
VER_HDET_PCB_PPM_FLAG	CHAR(1)	Verification Hazardous Detail PCB Parts Per Million Flag
		Flag that is manually entered when the PCB PPM identified in WRAP Module 1 is different than that identified by the generator.
		Domain: "Y", "N" or null.
VER_HDET_PCB_TYPE	CHAR(1)	Verification Hazardous Detail PCB Type
		Domain: (CODECHECK) 'A' = Article 'C' = Container 'R' = Article container
VER_HDET_PCB_TYPE_FLAG	CHAR(1)	Verification Hazardous Detail PCB Type Flag
		Flag that is manually entered when the PCB type identified in WRAP Module 1 is different than that identified by the generator.
		Domain: "Y", "N" or null.

VER_HDET_PCB_SUBTYPE	CHAR(1)	Verification Hazardous Detail PCB Sub-Type
		Storage category code for hazardous, mixed-radioactive and PCB solid waste. WRAP Module 1 verified character code defining the PCB according to sub-type.
		Domain: (CODECHECK) 'C' = Container 'E' = Contaminated Electrical Equipment (50-499 ppm) 'P' = Capacitor 'Q' = Contaminated Electrical Equipment (\geq 500 ppm) 'R' = Article Container 'S' = Submarine Reactor Compartment 'T' = Transformer.
VER_HDET_PCB_SUBTYPE_FLAG	CHAR(1)	Verification Hazardous Detail PCB Sub-Type Flag
		Flag that is manually entered when the PCB subtype identified in WRAP Module 1 is different than that identified by the generator.
		Domain: "Y", "N" or null.
VER_HDET_PCB_WGT	NUMBER(12,4)	Verification Hazardous Detail PCB Weight
		WRAP Module 1 verified weight of PCB's in the waste package.
		Domain: Numeric. Units are kilograms.
VER_HDET_PCB_WGT_FLAG	CHAR(1)	Verification Hazardous Detail PCB Weight Flag
		Flag that is manually entered when the PCB weight identified in WRAP Module 1 is different than that identified by the generator.
		Domain: "Y", "N" or null.
VER_CON_SCAT_CD	CHAR(3)	Verification Container Storage Category Code
		Domain: Storage Category Table (STORAGECAT) SCAT_CD.

VER_CON_SCAT_CD_FLAG CHAR(1) Verification Container Storage Category Code Flag

Flag is manually entered when the storage category determined in WRAP Module 1 is different than the storage category assigned by the generator.

Domain: "Y", "N" or null.

VER_HDET_WASTE_VOLUME NUMBER(10,4) Verification Hazardous Detail Waste Volume

The actual volume of the hazardous waste as opposed to the container volume. This value is less than or equal to the container volume.

VER_HDET_WASTE_VOLUME_FLAG CHAR(1) Verification Hazardous Detail Waste Volume Flag

Flag is manually entered when the waste volume determined in WRAP Module 1 is different than the waste volume determined by the generator.

Domain: "Y", "N" or null.

Container/Content Record (WASTE)
*CON_PKG_ID CHAR(14)

Container Package ID

The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste.

Domain: Alphanumeric.

CON_ALERT_FLAG CHAR(1) Container Alert Flag

Flag used during inventory/ inspection to identify those waste packages that need additional attention, i.e. potential leaker.

Domain: If set to Y, will be acknowledged as a valid alert flag. If not Y, is not a valid alert flag. This flag can be reset by either the Generator or

CON_ACCUM_DT	DATE	<p>the TSD depending on where the container is located.</p> <p>Container Accumulation Date</p> <p>Accumulation date, the date the waste was accumulated. This date is the beginning of the storage time limit identified in the Primary Waste Type table. This field is also used as the general date of waste generation for all waste types.</p> <p>Domain: Oracle format date.</p>
CON_CHEM_NATURE_CD	CHAR(2)	<p>Container Chemical Nature Code</p> <p>A code required on the annual dangerous waste report.</p> <p>Domain: The code is either 'O' for organic or 'I' for inorganic. In some cases it may be both.</p>
•CON_CNTR_VOL	NUMBER(10,4)	<p>Container Volume</p> <p>Total volume for a specific container.</p> <p>Domain: Container Size Table (CONSIZE) CSZ_VOL. Default units are cubic meters.</p>
•CON_CNTYP_CD	CHAR(2)	<p>Container Type Code</p> <p>Codes which identify the type of container per Department of Transportation and other requirements.</p> <p>Domain: Container Type Table (CONTYPE) CNTYP_CD.</p>
CON_DOT_SPEC	CHAR(3)	<p>Container DOT Specification</p> <p>The Department of Transportation Specification for the outer waste container.</p> <p>Domain: DOT Specification Table (DOTSPEC) DOT_SPEC.</p>

CON_GENER_COMMENT	CHAR(80)	<p>Container Generator Comment</p> <p>Generator comment related to this package.</p> <p>Domain: Alphanumeric.</p>
CON_GENER_WASTE_DESCR	CHAR(255)	<p>Container Generator Waste Description</p> <p>Generator prepared waste content description.</p> <p>Domain: Alphanumeric.</p>
CON_GROSS_WGT	NUMBER(10,2)	<p>Container Gross Weight</p> <p>Gross weight of a waste container. It includes the weight of the waste, of the container and of any shielding. Gross weight cannot exceed waste description weight plus container weight plus hazardous component weight.</p> <p>Domain: Number. Units are kilograms.</p>
CON_ITEM_NUM	CHAR(4)	<p>Container Item Number</p> <p>Line item number for the manifest on which the package is shipped from the generator.</p> <p>Domain: Whole number.</p>
CON_LABPACK_FLAG	CHAR(1)	<p>Container Labpack Flag</p> <p>Flags whether or not a container is a lab pack.</p> <p>Domain: The flag is Y or N.</p>
CON_LOCN_FACIL_AREA	CHAR(6)	<p>Container Location Facility Area</p> <p>The approved name of the areas identified on the Hanford site used for the storage or disposal of waste; area names include 200E, 200W, etc.</p> <p>Domain: Facility Table (FACILITY) FACIL_AREA.</p>

•CON_LOCN_FACIL_ID	CHAR(11)	Container Location Facility ID The specific facility where waste is generated, received, or stored on the Hanford site. Domain: Facility Table (FACILITY) FACIL_ID.
CON_MFST_NUM	CHAR(10)	Container Manifest Number Manifest number on which the package is being shipped from the generator. Domain: Alphanumeric.
CON_PHYS_STATE_CD	CHAR(3)	Container Physical State Code Code that describes the actual physical state of the waste. Domain: 'S' for solid, 'L' for liquid, 'G' for sludge, and 'M' for compressed gas.
CON_PKG_DT	DATE	Container Package Date This is the date that a container was closed and physically sealed. For radioactive waste, it applies mainly to WIPP certified transuranic waste but may apply to LLW in the future. For hazardous and mixed waste, it is used as the accumulation date. This applies to the package closure mechanism and not to an official seal such as a numbered tag. Domain: Oracle format date.
•CON_PKG_STATUS	CHAR(1)	Container Package Status Package status code indicating status of waste package, required edit level, and data ownership. Domain: Package Status Table (PKGSTAT) PKS_STATUS.
•CON_PWTYP_CD	CHAR(2)	Container Primary Waste Type Code Primary waste type code identifying the type of waste in a

		particular container or waste stream.
		Domain: Primary Waste Type Code Table (PRIWASTYPE) PWTYP_CD.
CON_SAMPLE_FLAG	CHAR(1)	Container Sample Flag
		Identifies wastes that must be sampled prior to shipment offsite. The sampling is required for acceptance of the waste at the offsite TSD.
		Domain: 'Y', 'N', or null.
CON_SCAT_CD	CHAR(3)	Container Storage Category Code
		Domain: Storage Category Table (STORAGECAT) SCAT_CD.
CON_SEC_PKG_ID	CHAR(14)	Container Secondary Package ID
		A secondary package ID that the generator may use or is used to identify the inner container of an overpack.
		Domain: Alphanumeric.
CON_SHIP_DT	DATE	Container Ship Date
		The date on which the package was shipped from the generator.
		Domain: Oracle format date.
•CON_SIZE_DESCR	CHAR(14)	Container Size Description
		The dimensions of the container. Length x width x height or diameter x length for cylindrical waste packages, which could include containers such as 55 gallon, 30 gallon, 12-B, etc.
		Domain: Container Size Table (CONSIZE) CSZ_DESCR.
CON_SRCE_CHRG_CD	CHAR(8)	Container Source Charge Code
		A charge code to be used in billing for this package.
		Domain: Alphanumeric.

•CON_SRCE_CMPNY_ID	CHAR(4)	Container Source Company Id Identifies the company who generates the waste. Typical codes are WHC, KEH, PNL, etc. Domain: Company Table (COMPANY) CMPNY_ID.
•CON_SRCE_FACIL_ID	CHAR(11)	Container Source Facility ID Identifies the facility where waste is generated. The facility is identified by number and is the official WHC building number. Domain: Facility Table (FACILITY) FACIL_ID.
•CON_SRCE_ORG	CHAR(8)	Container Source Organization Source of the waste. Used for identification in generator reports. Domain: Alphanumeric.
CON_TARE_WGT	NUMBER(10,2)	Container Tare Weight The weight of an empty waste container. This tare weight may include any shielding material required. Domain: Number. Units are kilograms.
CON_TREATMENT_DT	DATE	Container Treatment Date The date the waste is actually treated, such as incinerated. Domain: Oracle format date.
CON_TSD_ACCEPT_DT	DATE	Container TSD Accept Date Identifies the date that the waste was accepted for treatment, storage, or disposal at an EPA approved TSD facility. Domain: Oracle format date.

CON_WASTE_WGT NUMBER(12,4) Container Waste Weight

Total weight of the contents found in a specific waste container.

Domain: Number. Units are kilograms.

Container & Content Extension Record (WASTEXT) - New Record

*CONEXT_PKG_ID CHAR(14) Container Extension Package ID

The unique package identification number that is assigned to the outer waste package. The number is assigned by the waste generator and is used for tracking all waste.

Domain: Alphanumeric.

CONEXT_CNTR_STATUS CHAR(2) WRAP RWM Container Status

Status codes of an RWM transfer drum.

Domain: Alphanumeric

'E' = empty
'F' = full
'P' = part full.

CONEXT_COMPLIANT_FLAG CHAR(1) Container Compliant Flag

Flags a container to identify if it is compliant or non-compliant based on the assay, examination, or visual inspection. This flag will be used to re-route a newly generated non-compliant waste drum to the processing area or route it within the glovebox where it will be opened.

Domain: 'C' or null.

CONEXT_CONTAMINATION_FLAG CHAR(1) Container Contamination Flag

Flags whether or not an overpack drum is contaminated.

Domain: 'Y', 'N', or null.

CONEXT_HEIGHT	NUMBER(12,4)	Container Height
		Height of a puck loaded out of the glovebox after processing.
		Domain: Numeric \geq .12, units in meters
CONEXT_RADMAT_ID	CHAR(1)	Container Fissile Material ID
		The fissile material ID that describes the area that the container fissile material has been added to.
		Domain: 'F' = Facility 'T' = TRU Glovebox 'R' = TRU RWM Glovebox.
CONEXT_NDA_REVIEW_FLAG	CHAR(1)	Container NDA Review Flag
		Determines whether the NDA results have been reviewed or not.
		Domain: 'Y', 'N', or null.
CONEXT_NDE_VER_FLAG	CHAR(1)	Container NDE Verified Flag
		Flags a container to identify if it is verified or not verified based on non-destructive examination.
		Domain: 'V' or null.
CONEXT_PROF_FLAG	CHAR(1)	Container Profile Flag
		Determines whether default profile data is used.
		Domain: 'Y', 'N', or null.
CONEXT_PROF_ID	CHAR(6)	Container Assay Profile ID
		The generator assay profile ID associated with this container.
		Domain: Profile Table (PROFILE) PROF_ID.
CONEXT_ROUTE_CD	CHAR(4)	Container Route Code
		Container Route Code used to identify the various container routings within WRAP Module 1.

The routing codes will be used by the PCS to identify the routings.

Code that identifies the processing route assigned to the container.

Domain: Route Table (ROUTE)
ROUTE_CD.

CONEXT_RVST_FLAG CHAR(1)

Container Revisit Flag

Flag used to determine if the NDA results need to be revisited.

Domain: 'Y', 'N', or null.

•CONEXT_SHIPPICK_CD CHAR(6)

Container Shipment Picklist Code

Shipment code assigned to the container following processing, used to assign the container to the appropriate shipping picklist.

Domain: Shipment Picklist Description Table (SHIPPICK)
SHIPPICK_CD

CONEXT_TREATMENT_FLAG CHAR(1)

Container Treatment Flag

The treatment flag that indicates that the container has been treated.

Domain: 'Y', 'N', or null.

•CONEXT_TRUCON_CD CHAR(6)

Container TRUCON Code

The TRUPACT II code or designation for a particular waste stream.

Domain: TRU Container Code Table (TRUCON) TRUCON_CD.

CONEXT_USE_CD CHAR(2)

Container Use Code

Code assigned to identify what a container is or is used for, i.e., transfer drum, calibration drum, purge port, PIG, packet, inner waste item, collection or treatment container, etc.

Domain:

- 'AC' = Aerosol Can
- 'BX' = Box
- 'CC' = Collection Container
- 'CD' = Calibration Drum
- 'EC' = Empty Container
- 'OD' = Overpack Drum
- 'PD' = Product Drum
- 'PU' = Puck
- 'PK' = Packet
- 'PP' = Purge Port
- 'TC' = Treatment Container
- 'TD' = Transfer Drum
- 'TP' = Transfer Pig
- 'VL' = Verification Drum-Low Std
- 'VH' = Verification Drum-High Std
- 'WC' = Waste Container.

CONEXT_WRAP_SAM_FLAG CHAR(1) Container WRAP Sample Flag

Indicates that this container has been sampled (Y) or not (N).

Domain: 'Y', 'N', or null.

CONEXT_WRAP_STAT_CD CHAR(2) Container WRAP Status Code

Code that identifies current status of the package at WRAP.

Domain:

- 'W' = Waiting for processing
- 'I' = In-process
- 'C' = Processing complete, waiting for completion of shipping papers
- 'S' = Ready for shipment.

Treatment Worksheet (WORKSHEET) - New Data Record

*WORKSHEET_ID CHAR(8) Treatment Worksheet ID

The treatment worksheet ID assigned by the chemist deciding which treatment to apply to which drums in the RWM glovebox.

Domain: Alphanumeric

WORKSHEET_NAME CHAR(12) Worksheet Name

The worksheet name is the short text name that is used to describe the worksheet to the WRAP 1 operators.

		Domain: Alphanumeric
•WORKSHEET_PROC_NUM	CHAR(14)	Procedure Number
		The procedure number is the WRAP 1 identifier for the procedure.
		Domain: Treatment Procedure Table (TREATPROC)
WORKSHEET_FILE_POINT	CHAR(14)	Worksheet File Pointer
		Pointer to the file to be displayed on the DMS console during treatment
		Domain: Alphanumeric

Worksheet Item (WORKITEM) - New Data Record

•*WORKITEM_ID	CHAR(8)	Worksheet Item ID
		The treatment worksheet ID assigned by the chemist deciding which treatment to apply to which drums in the RWM glovebox.
		Domain: Alphanumeric
*WORKITEM_PKG_ID	CHAR(14)	Worksheet Item Package ID
		PIN from the packet of waste or sample removed from the transfer drum or purge port for treatment in the RWM glovebox
		Domain: Alphanumeric
WORKITEM_XFR_PIN	CHAR(14)	Worksheet Item Transfer Container PIN
		PIN of the transfer drum or purge port containing the packet or sample to be treated
		Domain: Alphanumeric

C.2.2 Data Look-Up Tables Element Descriptions

Calibration Container Table (CALCON) - New Data Table

*CALCON_PKG_ID	CHAR(14)	Calibration Package ID
		The package ID of the calibration drum or box.
-CALCON_DESCR	CHAR(7)	Calibration Package Description
		The description mnemonic which indicates the type of calibration drum or box.

Miscellaneous Code Table (CODECHECK)

*CODE_FIELD_NAME	CHAR(24)	Code Field Name
		The name of a data field as specified in the data dictionary for which a code validation edit is required.
*CODE_VALUE	CHAR(12)	Code Value
		A valid value for the data field being tested.
CODE_DESCR	CHAR(70)	Code Description
		A description of the code and its purpose.

Company Table (COMPANY)

*CMPNY_ID	CHAR(4)	Company ID
		Identifies the company which generates, transports, treats, stores, or disposes of the waste. Typical codes are WHC, KEH, PNL, etc.
*CMPNY_TYPE	CHAR(3)	Company Type
		Additional identifier for the company performing solid waste activities. Company Types include: TRA Transportation Company GEN Generator TSD TSD

CMPNY_CITY	CHAR(15)	Company City City in which the company resides.
CMPNY_EPA_ID	CHAR(12)	Company Environmental Protection Agency (EPA) ID Unique identification number assigned by the EPA to a company.
CMPNY_LOCATION	CHAR(3)	Company Location A code to describe the company as on-site (ON) or off-site (OFF).
CMPNY_PHONE	CHAR(12)	Company Phone Phone number for the official point of contact for the organization specified by the company ID and company type code.
*CMPNY_STATE_CD	CHAR(2)	Company State Code Standard state abbreviation code.
CMPNY_STREET	CHAR(36)	Company Street Street address for the company.
CMPNY_TITLE	CHAR(60)	Company Title The name of a company.
CMPNY_ZIP_CD	CHAR(10)	Company Zip Code The zip code for the area in which the company resides.
<u>Container Size Table (CONSIZE)</u>		
*CSZ_CNTYP_CD	CHAR(2)	Container Size Container Type Code The code which refers to the type of container.
*CSZ_DESCR	CHAR(14)	Container Size Description This describes the size of the container.
CSZ_VOL	NUMBER(10,4)	Container Size Volume This provides the volume of a certain container type.

Container Type Table (CONTYPE)

*CNTYP_CD	CHAR(2)	Container Type Code
		Code which identifies the type of container per Department of Transportation (DOT) and other requirements. Codes include DM for metal drums, barrels, etc.
CNTYP_DESCR	CHAR(42)	Container Type Description
		The DOT or other specifications describing a waste container. Specification includes 17c, 17h, self contained, plywood box, metal box, etc.

Facility Curie Limit (CURIELIMIT)

*CL_FACIL_ID	CHAR(11)	Curie Limit Facility ID
		This identifies the facility as part of the Central Waste Complex (CWC).
*CL_SECTION	CHAR(2)	Curie Limit Section
		The quadrant of the facility (if applicable).
CL_LIMIT	NUMBER(7,2)	Curie Limit
		The number representing 90% of the allowable limiting condition for operation (LCO) for a given combination of facility and quadrant.
CL_DE_CI_LIMIT	NUMBER (7,2)	Curie Limit Dose Equivalent Curie Limit
		Specifies the maximum Dose-Equivalent Sum permitted by Westinghouse for a given facility and quadrant. Also called the LCO (Limit Condition of Operation) by the SWO Group.

Field Help Table (DATADICT)

*DD_TABLE_NAME	CHAR(20)	Data Dictionary Table Name
		The table name for each data element.

*DD_FIELD_NAME	CHAR(36)	Data Dictionary Field Name The data element name.
DD_DATA_TYPE	CHAR(15)	Data Dictionary Type The data element type and size.
DD_HELP_TEXT	LONG	Data Dictionary Help Text The data element description.

DOT Container Specification Table (DOTSPEC)

*DOT_SPEC	CHAR(3)	DOT Specification This is a unique identification of a DOT specification entered by WMP when a DOT specification becomes associated with SWITS.
DOT_DESCR	CHAR(60)	DOT Specification Description Text description of a DOT specification entered by WMP when a DOT specification becomes associated with SWITS.

Dangerous Waste Number Table (DWNUM)

*DW_NUM	CHAR(4)	Dangerous Waste Number Unique identifier for a Dangerous Waste Number.
DW_DESCR	CHAR(20)	Dangerous Waste Description Text description for a Dangerous Waste Number.
DW_LANDBAN	CHAR(1)	Dangerous Waste Landban Code indicating whether the waste associated with the dangerous waste number is regulated as "Land Banned". Yes - defined as always land banned. No - defined as never land banned. Null - not defined. The user must determine for each package.

DW_SORT_HAZ NUMBER(3) Dangerous Waste Sort Hazardous

Reports generated using dangerous waste numbers have a unique reporting order. The value in this field will determine the sort order for hazardous waste.

DW_SORT_MIXED NUMBER(3) Dangerous Waste Sort Mixed

Reports generated using dangerous waste numbers have a unique reporting order. The value in this field will determine the sort order for mixed waste.

Error Message Table (ERRMESSAGE)

*ERR_NUM CHAR(4) Error Message Number

The code which identifies an error message. Consists of an alpha, E for error or I for information, followed by 3 numerics.

ERR_TEXT CHAR(72) Error Message Text

A one-line error message.

ERR_DESCR CHAR(255) Error Message Description

A more complete description of the error.

Facility Table (FACILITY)

*FACIL_ID CHAR(11) Facility ID

The specific facility where waste is generated, received, or stored on the Hanford site.

FACIL_AREA CHAR(6) Facility Area

The approved name of the areas identified on the Hanford site used for the storage or disposal of waste; area names include 200E, 200W, etc.

FACIL_BAR_ID	CHAR(5)	Facility Barcode ID The approved machine readable code (MRC) assigned by the MRC Council to identify location within barcode labels.
FACIL_NAME	CHAR(50)	Facility Name The proper name given to a facility which generates or receives waste for treatment, storage, or disposal.
<u>Form Help Table (FORMHELP)</u>		
*FH_FORM_NAME	CHAR(8)	Form Help Name SWITS menu or screen name.
FH_HELP_TEXT	LONG	Form Help Text Help description for the SWITS screen.
<u>Hazardous Chemical Component Table (HAZCOMP)</u>		
*HCC_ID	CHAR(12)	Hazardous Chemical Component ID Unique identification of a hazardous chemical component.
HCC_CAS	CHAR(12)	Hazardous Chemical Component Chemical Abstract Number Chemical abstract number of a hazardous chemical component. This is needed for EPCRA-313 reportable chemicals.
HCC_DESCR	CHAR(70)	Hazardous Chemical Component Description Text description of a hazardous chemical component.
HCC_NEWID	CHAR(12)	Hazardous Chemical Component New ID Identification used for conversion of temporary IDs to permanent IDs.

Isotope Table (ISOTOPE)

<u>*ISO_NUM</u>	NUMBER(3)	Isotope Number
		Code arbitrarily assigned for solid waste to identify a specific isotope or entity reported as an isotope, such as mixed fission products, CO-60, SR90, etc.
ISO_CLASS_A_LIM	FLOAT	Isotope Class A Limits Defines the upper limits for determining Class A radionuclides. Units are curies per cubic meter (ci/m^3), or nci/g for alpha emitting transuranic radionuclides.
ISO_CLASS_B_LIM	FLOAT	Isotope Class B Limits Defines the upper limits for determining Class B radionuclides. Units are curies per cubic meter (ci/m^3), or nci/g for alpha emitting transuranic radionuclides. Limits are defined in 10 CFR 61.55.
ISO_CLASS_C_LIM	FLOAT	Isotope Class C Limits Defines the upper limits for determining Class C radionuclides. Units are curies per cubic meter (ci/m^3), or nci/g for alpha emitting transuranic radionuclides. Limits are defined in 10 CFR 61.55. Note: not all radionuclides are Class C.
ISO_CLASS_1_LIM	FLOAT	Isotope Class 1 Limits Defines the upper limits for determining Class 1 radionuclides. Units are curies per cubic meter (ci/m^3), or nci/g for alpha emitting transuranic radionuclides.
ISO_CLASS_3_LIM	FLOAT	Isotope Class 3 Limits Defines the upper limits for determining Class 3 radionuclides. Units are curies per cubic meter (ci/m^3), or nci/g for alpha

		emitting transuranic radionuclides.
ISO_CONSTR_LIMIT	FLOAT	<p>Isotope Concentration Limits</p> <p>Concentration limits set for disposal/storage for waste. The values are not static. This field is used to contain values where a one time special report is needed. When the report is done, these values should be deleted making the fields available for other reports.</p>
ISO_CONV_FACTR	FLOAT	<p>Isotope Conversion Factor</p> <p>Factor for converting grams of the specific isotope to curies.</p>
ISO_DE_CI_FACTR	FLOAT	<p>Isotope Dose Equivalence Curie Factor</p> <p>Dose Equivalence Factor for the given Isotope. This value is multiplied with the quantity of the isotope to get the dose equivalence sum for an isotope. The sum of all the isotopes in a package is stored in RDET_TOT_DE_CI.</p>
ISO_DTR_ISO	NUMBER(3)	<p>Isotope Daughter Products Isotope Number</p> <p>The isotope number of any daughter product produced by radioactive decay.</p>
ISO_DTRPRD_FACTR	FLOAT	<p>Isotope Daughter Products Factor</p> <p>Factor for the parent/daughter radionuclide pairs showing the corresponding activity of the daughter product.</p>
ISO_ENRICH	CHAR(1)	<p>Isotope Enrichment</p> <p>Yes/no flag to indicate the possibility of the isotope occurring in multiple enrichments. Yes - enriched isotope may exist. No - enriched isotope can not exist.</p>

ISO_HALFLIFE	FLOAT	Isotope Half Life Half-life of isotope in days, rate of decay.
ISO_MAP_FACTR	FLOAT	Isotope Mixed Activation Products Factor The proportion of MAP (Mixed Activation Products, Isotope 19) which is assumed to consist of the specific isotope in question, if and only if, the source of the waste is 100 Area facilities with the exception of 108F facility or the waste source is identified in the company table as a generator of MAP instead of MFP.
ISO_MAP_NAME	CHAR(5)	Isotope Mixed Activation Products Name Name given to specific isotope to be used if it has a non-zero value for MAP factor.
ISO_MFP_FACTR	FLOAT	Isotope Mixed Fission Products Factor The proportion of MFP (Mixed Fission Products, Isotope 19) which is assumed to consist of the specific isotope in question.
ISO_NAME	CHAR(20)	Isotope Name Name of a specific isotope.
ISO_UNIT	CHAR(2)	Isotope Unit Units by which amounts of a specific isotope are measured. Normally gm for grams or ci for curies.
<u>Laboratory Table</u> (LAB) *LAB_ID	CHAR(11)	Laboratory ID A unique identifier for a laboratory approved to perform waste sample analysis.

LAB_NAME	CHAR(30)	Laboratory Name Name of a laboratory approved to perform waste sample analysis.
<u>Container Location Matrix Table (LOCMTX) - New Data Record</u>		
•*LOCMTX_FROM_LOCN_ID	CHAR(10)	Container From Location The current location of the container in the record CONLOC is used as the index to this table.
•*LOCMTX_TO_LOCN_ID	CHAR(10)	Container To Location The new container location in the message from the PCS is checked against this field to ensure that the container is allowed to move here.
<u>Location Table (LOCN) - New Data Record</u>		
•*LOCN_ID	CHAR(10)	WRAP 1 Location ID Identifies a location within WRAP Module 1 where waste item or empty drum is stored or processed. This includes nondestructive examination equipment, assay equipment, gloveboxes, AS/RS, carousels, conveyors, etc.
LOCN_DESC	CHAR(60)	Location Description Description or name of a location within WRAP Module 1
<u>Material Table (MATL) - New Data Record</u>		
•*MAT_GRP_CD	CHAR(2)	Material Group Code This unique code is used to identify the WRAP 1 specific waste components for packets Domain: Alphanumeric
MATL_GRP_DESCR	CHAR(30)	Material Group Description Unique description for material group codes. Domain: Alphanumeric

Material Safety Data Sheets (MSDS)

*MSDS_ID CHAR(6)

Material Safety Data Sheet ID number.

MSDS_DESCR CHAR(40)

Material Safety Date Sheet Description

A description of the waste package on the Material Safety Data Sheet.

Person Table (PERSON)

*PERS_ID CHAR(6)

Person ID

This is the primary identifier for any person of interest to SWITS. This key will be used in other tables which have information for special subsets of individuals in the PERSON table (e.g. the GENERATOR table).

For onsite (Hanford) employees, this is the employee ID. For offsite persons, an ID is created using the CMPNY ID plus a number; where LENGTH(CMPNY_ID) ≤ 3, the PERS ID will be CIDNNN, and where LENGTH(CMPNY_ID) = 4, PERS ID will be CIDNN, where CID = the CMPNY ID and NN or NNN = 001/01 for the 1st entry from that company and then incremented as needed, e.g., the first PERS_ID entered for University of Washington (CMPNY_ID = UOW) would be UOW001.

PERS_CITY CHAR(15)

Person City

City part of address.

•PERS_CMPNY_ID CHAR(4)

Person Company ID

•PERS_CMPNY_TYPE CHAR(3)

Person Company Type

Additional identifier of the company with which the person is affiliated.

PERS_MSIN CHAR(5)

Person MSIN

MSIN (Mail Stop Identification Number) for onsite employee. NULL for offsite persons.

PERS_NAME	CHAR(20)	Person Name Format is 2 initials plus last name. If the person does not have a middle initial, a blank will be used in its place.
PERS_PHONE	CHAR(12)	Person Phone Number Work phone number of person. Format is NNN NNN-NNNN; i.e. area code and full prefix are required.
•PERS_STATE_CD	CHAR(2)	Person State Code State Code of address.
PERS_STREET	CHAR(36)	Person Street. Street part of address.

PERS_ZIP_CD CHAR(10) Person Zip Code
 Zip Code part of address.

Physical Component Description Table (PHYSDESC)

*PDESC_DESCR CHAR(30) Physical Description
 The description of a physical component in radioactive or mixed waste. Descriptions include paper, plastic, rags, concrete, etc.

Package Status Table (PKGSTAT)

*PKS_STATUS CHAR(1) Package Status
 Code indicating a package's status.

PKS_DESCR CHAR(60) Package Status Description
 Text description of a package status.

PKS_EDIT CHAR(1) Package Status Edit
 Edit level associated with a waste package's data when this package status is assigned.

Edit levels are:
 1 Default: Fields defining the container are required.
 2 Contents: Fields defining the waste are required.
 3 Shipment: Fields defining the shipment are required.

PKS_OWNER CHAR(3) Package Owner
 Package data owner when a waste package is assigned this package status.
 Owners can be: GEN, WMP, SWO

Primary Waste Type Code Table (PRIWASTYPE)

*PWTYP_CD CHAR(2) Primary Waste Type Code
 Primary waste type code. This code identifies the type of waste in a particular container or waste stream.

PWTYP_DESCR	CHAR(20)	Primary Waste Type Description. Description of the primary waste type code.
PWTYP_HAZ	CHAR(1)	Primary Waste Type Hazardous Yes/no flag to indicate if this type of primary waste is hazardous waste. Yes - hazardous, mixed-radioactive, or PCB waste. No - no hazardous components.
PWTYP_SHIP_TIME	NUMBER(3)	Primary Waste Type Ship Time Days allowed before generated waste must be shipped. 30 days for PCBs, 90 days for other hazardous or mixed waste.
PWTYP_RAD	CHAR(1)	Primary Waste Type Radioactive Yes/no flag to indicate if this type of primary waste is radioactive waste. Yes - radioactive.. No - no radioactive components.

Procedure Access Table (PROCACC)

*PRAC_USERID	CHAR(7)	Procedure Access User ID User Id of the user authorized to access and execute a procedure.
*PRAC_PROC	CHAR(8)	Procedure Access Procedure Identification of a procedure associated with the user ID.

Generator Assay Profile Table (PROFILE) - New Data Record

*PROF_ID	NUMBER(3)	Assay Profile Number Profile number of assay data associated with a generator or multiple generators.
PROF_DESCR	CHAR(50)	Assay Profile Description Basic description of the assay profile data such as percentage of Pu.

PROF_PU239	FLOAT	Profile Percent Pu239 (Ratio of Pu239 to Pu240)
PROF_DT	DATE	Profile Date

Profile Isotopic Table (PROFILEISO) - New Data Record
 **PISO_PROF_ID NUMBER(3) Profile Isotopic Profile Number

Profile number of assay data associated with a generator or multiple generators.

*PISO_ISO_NAME	CHAR(8)	Profile Isotopic Name
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The isotopic name for this profile.

PISO_RABUND	FLOAT	Profile Relative Abundance
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The relative abundance of this isotope in this profile.

PISO_TMU	FLOAT	Profile Relative Abundance TMU
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The relative abundance Total Measurement Uncertainty in this profile.

Report Table (REPORTABLE)
 *RPT_NAME

CHAR(8)	Report Table Name
---------	-------------------

Name of report.

RPT_TITLE	CHAR(40)	Report Table Title
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Title or report.

RPT_SELECT	CHAR(8)	Report Table Select
------------	---------	---------------------

Name of selection criteria forms block.

RPT_TIMING	CHAR(1)	Report Table Timing
------------	---------	---------------------

Parameter restricting how and when a report will run. I - Immediate, B - Batch only, O - Batch overnight (non-prime time).

RPT_GENSPEC	CHAR(1)	Report Table Generator Specific
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Yes/no flag used to identify reports specific to the user's

generator group. Yes - when the report is specific to data for the user's generator group. No - when the report is not specific to the user's generator group.

Role Table (ROLE)

*ROLE_CD	CHAR(3)	Role Code
		Unique identification of a role a person can assume in SWITS.
ROLE_DESCR	CHAR(60)	Role Description
		Text description of the role.

Route Description Table (ROUTE) - New Data Record

*ROUTE_CD	CHAR(4)	Route Code
		Code that identifies the route assigned to a container designating the process routing of that container.
ROUTE_DESCR	CHAR(25)	Route Description
		Description of the various processing routes a container may be assigned in WRAP Module 1.

Security Table (SECURITY)

*SEC_USERID	CHAR(7)	Security User ID
		The user's UserID.
*SEC_TABLE	CHAR(20)	Security Table
		The table or view which the privilege applies to.
*SEC_PRIVILEGE	CHAR(10)	Security Privilege
		The privilege being granted, such as INSERT or DELETE.

Secondary Waste Type Code Table (SECWASTYPE)

*SWTYP_CD	CHAR(2)	Secondary Waste Type Code
		Secondary waste type codes are a further breakdown of the SWTYP_GROUP.

SWTYP_GROUP	CHAR(3)	Secondary Waste Type Group Used for grouping data on some reports. Groups are Low-Level, Transuranic, Unsegregated, and High Level.
SWTYP_DESCR	CHAR(50)	Secondary Waste Type Description The description identifies the type of waste in a particular container or waste stream. The types are low-level, transuranic, unsegregated classified, industrial, or special case etc.

Shipment List Description Table (SHIPLIST) - New Data Record
 *SHIPLIST_NUM CHAR(6) Shipment Picklist Number

The shipment number assigned to each container that will be used to generate a shipping picklist.

Domain: Alphanumeric.

SHIPLIST_DESCR	CHAR(25)	Shipment Picklist Description
----------------	----------	-------------------------------

Description of the various shipping codes that will be used to generate the shipping pick list. This includes TRU to head gas or storage, TRU to disposal, LLW to disposal, and LLW to storage.

Domain: Alphanumeric.

SIE Isotopic Name Table (SIEISO) - New Data Record
 *SIE_ISO_NAME CHAR(8) SIE Isotopic Name

The specific isotopic name that is used by the SIE which it returns in its measurement message to the DMS.

SIE_ISO_NUM	NUMBER(3)	SIE Isotopic Number
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The associated isotopic number used by SWITS to identify isotopes in the ISOTOPE table.

State Table (STATE)

*STATE_CD	CHAR(2)	State Code Standard state abbreviation code.
STATE_NAME	CHAR(15)	State Name The name of the state.

Storage Category Table (STORAGECAT)

*SCAT_CD	CHAR(3)	Storage Category Code. Arbitrary code assigned by WMP to identify storage categories.
SCAT_CATEGORY	CHAR(20)	Storage Category Describes the storage category of the waste container. Each container will have only one category assigned. Categories include acid, caustic, flammable, other mixed waste (OMW), PCB's, etc.

System Bulletins (SYSBULL)

*BUL_DT	DATE	System Bulletins Date The date the bulletin is issued.
BUL_TEXT	LONG	System Bulletins Text The text of the bulletin, limited to 18 lines of 72 characters each.

Treatment Procedure (TREATPROC) - New Data Record

*TREAT_PROC_NUM	CHAR(14)	Treatment Procedure Number Unique number used to identify the treatment to be used Domain: Alphanumeric
*TREAT_PROC_REV_NUM	CHAR(4)	Treatment Procedure Revision Number Revision for the treatment procedure Domain: Alphanumeric

TREAT_PROC_DESCR	CHAR(30)	Treatment Procedure Description Text description of the treatment procedure Domain: Alphanumeric
TREAT_PROC_EXP_DT	DATE	Treatment Procedure Expiration Date Date that the procedure expires (No longer valid) Domain: Oracle format date
TREAT_PROC_AUTHOR	CHAR(30)	Treatment Procedure Author Author of the treatment procedure Domain: Alphanumeric
<u>TRU Container Code Table (TRUCON) - New Data Record</u>		
*TRU_CON_CD	CHAR(6)	TRU Container Type Code Code for the various containers approved for shipment to WIPP.
TRU_CON_CD_DESCR	CHAR(90)	TRU Container Type Description Description of the various containers acceptable for shipment to WIPP.
<u>TSD Facility Table (TSDFACIL)</u>		
*TFAC_FACIL_ID	CHAR(11)	TSD Facility ID Unique identification of a TSD Facility associated with SWITS.
TFAC_MFST_ADDR	CHAR(40)	TSD Manifest Address TSD facility address used in preparing manifests.
*TFAC_SCHEDULER	CHAR(6)	TSD Scheduler Identification of the TSD Facility scheduler.
*TFAC_SUPERVISOR	CHAR(6)	TSD Supervisor Identification of a TSD Facility supervisor.

Container Use Code Table (USECODE) - New Data Table

*USE_CD	CHAR(2)	Container Use Code
		The code that describes the use of that container such as empty drum, waste drum, packet, waste container, etc.
USE_CD_DESC	CHAR(50)	Container Use Code Description
		A description of the above use code.

WRAP Role Table (WRAPROLE) - New Data Table

*WRL_USERID	CHAR(7)	WRAP Role User Id
		Unique identification of a SWITS user.
*WRL_ROLE_CD	CHAR(3)	WRAP Role Code
		Unique identification of a role code a person can assume in SWITS.
*WRL_SIG_PSWD	CHAR(8)	WRAP Signature Password
		The user enters the Signature Password on those screens that ask for it to validate that an authorized user is committing the screen data to the database.

User Table (USERS)

*USR_USERID	CHAR(7)	User ID
		User's UserID. A unique identifier for a SWITS user. Generally a persons payroll number.
USR_ACCOUNT	CHAR(6)	User Account
		Account for computer billing.
USR_BULL_DT	DATE	User Bulletin Date
		The date a bulletin was published. Provide the user with a way of skipping the system bulletin which appears at logon time once it has been seen.
USR_LOGON_DT	DATE	User Logon Date

		The last date on which the user entered the system.
USR_NAME	CHAR(20)	User Name User's name.
USR_ORG	CHAR(5)	User Organization User's organization code.
*USR_PERS_ID	CHAR(6)	User Person ID User Person ID number.
USR_PR_DELIVER	CHAR(20)	User Print Deliver To User's output delivery address.
USR_PR_WHERE	CHAR(8)	User Printed Where Default device for output printed at a central or remote site (not printed through the user's terminal).
USR_TERM_TYPE	CHAR(6)	User Term Type Type of terminal used.
USR_TRAIN_DT	DATE	User Train Date The date the user received SWITS training.

WRAP Miscellaneous Table (WRAPMISC) - New Data Table

*WRAP_FIELD_NAME	CHAR(24)	WRAP Code Field Name The name of a data field as specified in the data dictionary for which a code validation edit is required. Domain: Alphanumeric VERLIM_WGT DEFAULT_PCK_HGHT DEFAULT_PCK_MTL_HGHT
*WRAP_CODE_VALUE	CHAR(12)	WRAP Code Value A valid value for the data field being tested. Domain: Alphanumeric

VERLIM WGT = ".1" unitless
DEFAULT_PCK_HGHT = ".21", units in
meters
DEFAULT_PCK_MTL_HGHT = ".012",
units in meters

WRAP_CODE_DESCR

CHAR(70)

WRAP Code Description

A description of the code and its
purpose.

Domain: Alphanumeric

VERLIM WGT - % deviation waste
container certification
weight and the weight
measured in WRAP 1

DEFAULT_PCK_HGHT - this value is
used as a default height
for the LLW pucks

DEFAULT_PCK_MTL_HGHT
used as a default value for
the effective height of the
metal in a supercompacted
puck

APPENDIX D
RELATIONSHIP MODELS

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CONTENTS

D.0 RELATIONSHIP MODEL D-1

FIGURES

D-1. RM-3.1.1.2 Receiving Drum or Box Containers. D-2
D-2. RM-3.1.1.2.5 Generate DMS Drum and Box Container Records. D-3
D-3. RM-3.1.3 LLW Process Glovebox. D-4
D-4. RM-3.1.3 LLW Process Glovebox (Continued). D-5
D-5. RM-3.1.6 Process Routing and Picklists. D-6

D.0 RELATIONSHIP MODEL

This appendix presents the relationship model for the WRAP 1 DMS. The Relationship Model graphically depicts the data processing events occurring in each process module. Each model is numbered according to the corresponding *WRAP 1 DMS SRS* section. Figure 3-3 of the *WRAP 1 DMS SDD* provides a guide to reading the Relationship Model, and object relationships including cardinality are described in *WRAP 1 DMS SDD* Section 3.3.2.

RELATIONSHIP MODEL

3.1.1.2 Receiving Drum or Box Containers

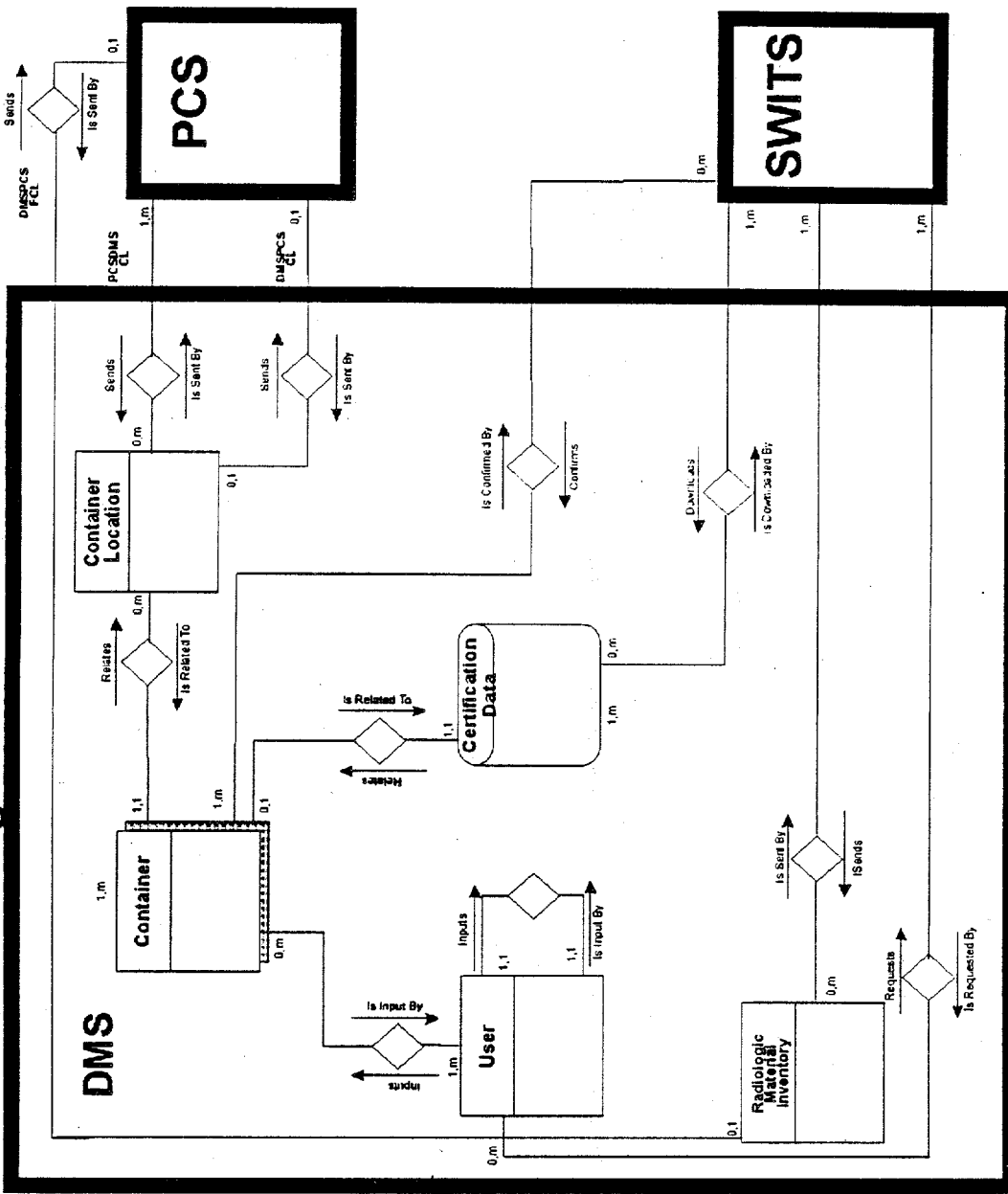


Figure D-1. RM-3.1.1.2 Receiving Drum or Box Containers.

RELATIONSHIP MODEL 3.1.1.2.5 Generate DMS Drum and Box Container Records Certification Data

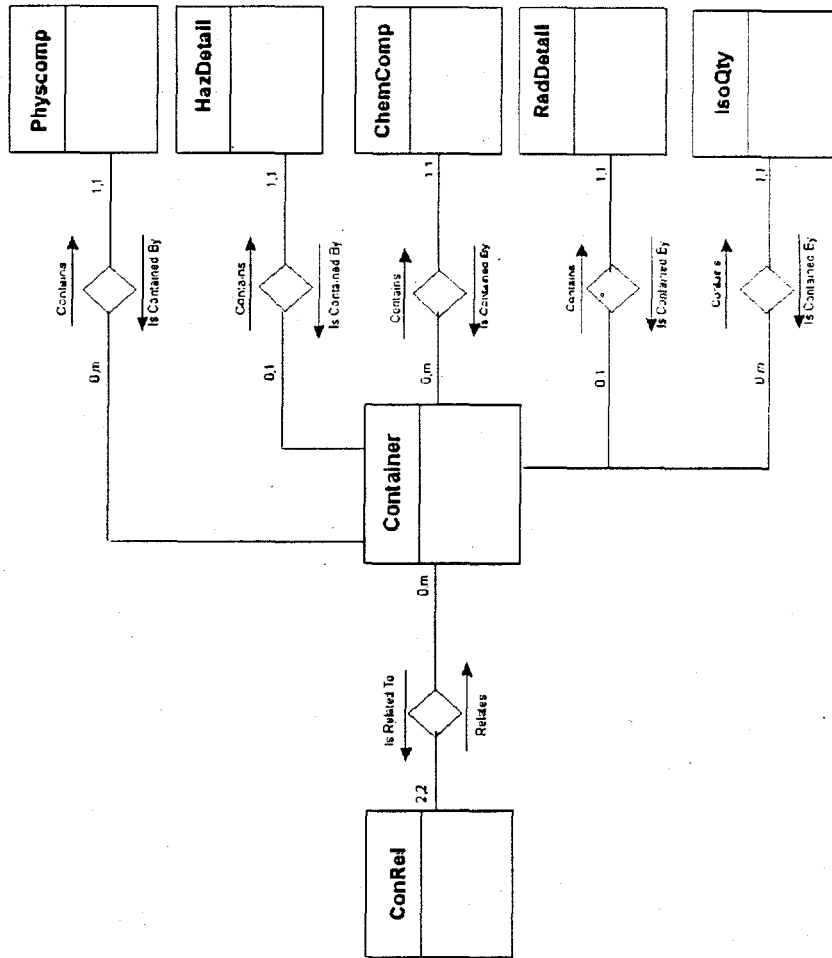
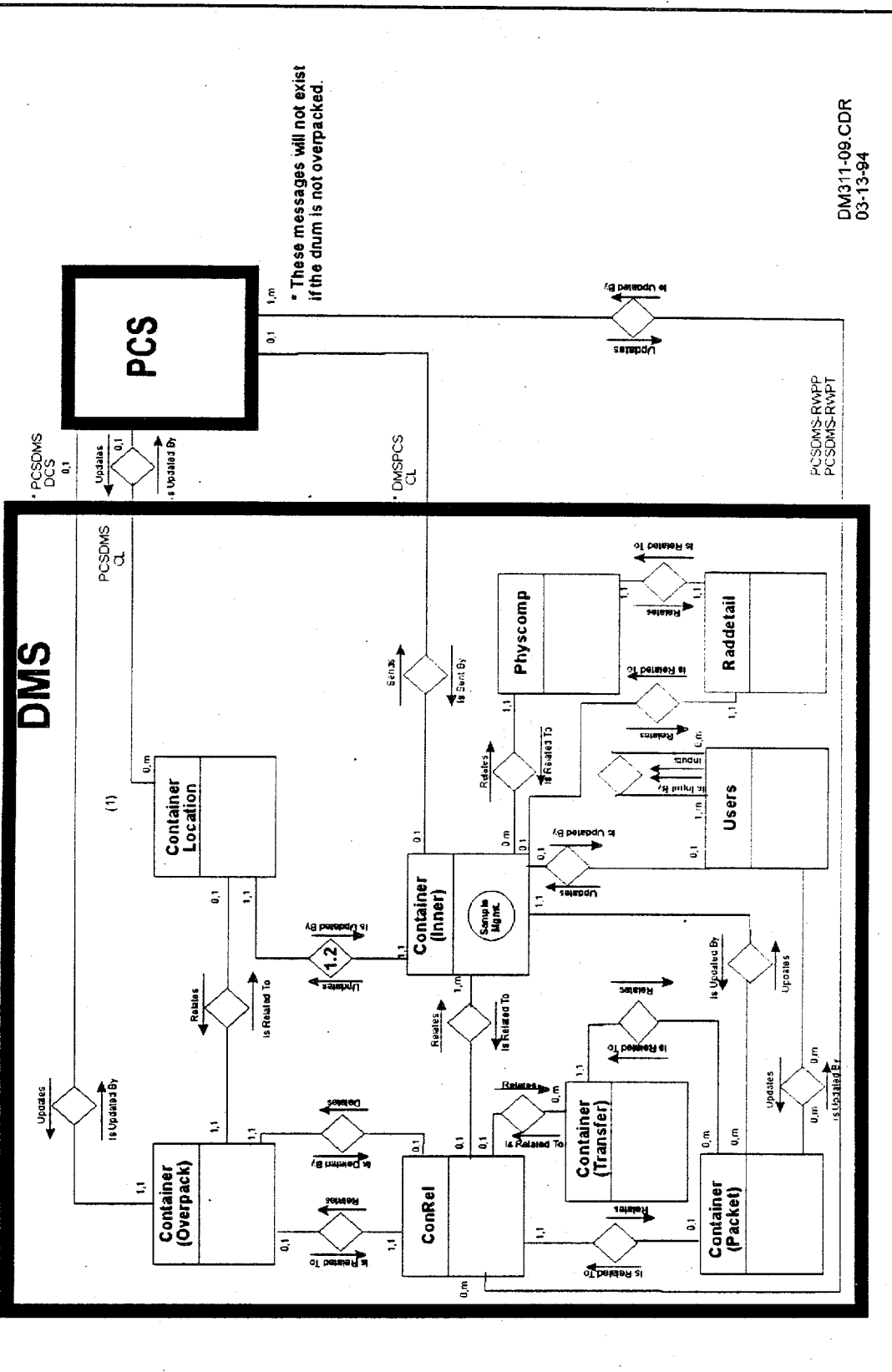


Figure D-2. RM-3.1.1.2.5 Generate DMS Drum and Box Container Records.

RELATIONSHIP MODEL 3.1.3 LLW Process Glovebox



DM311-09.CDR
03-13-94

Figure D-3. RM-3.1.3 LLW Process Glovebox.

RELATIONSHIP MODEL
3.1.3 LLW Process Glovebox (Continued)

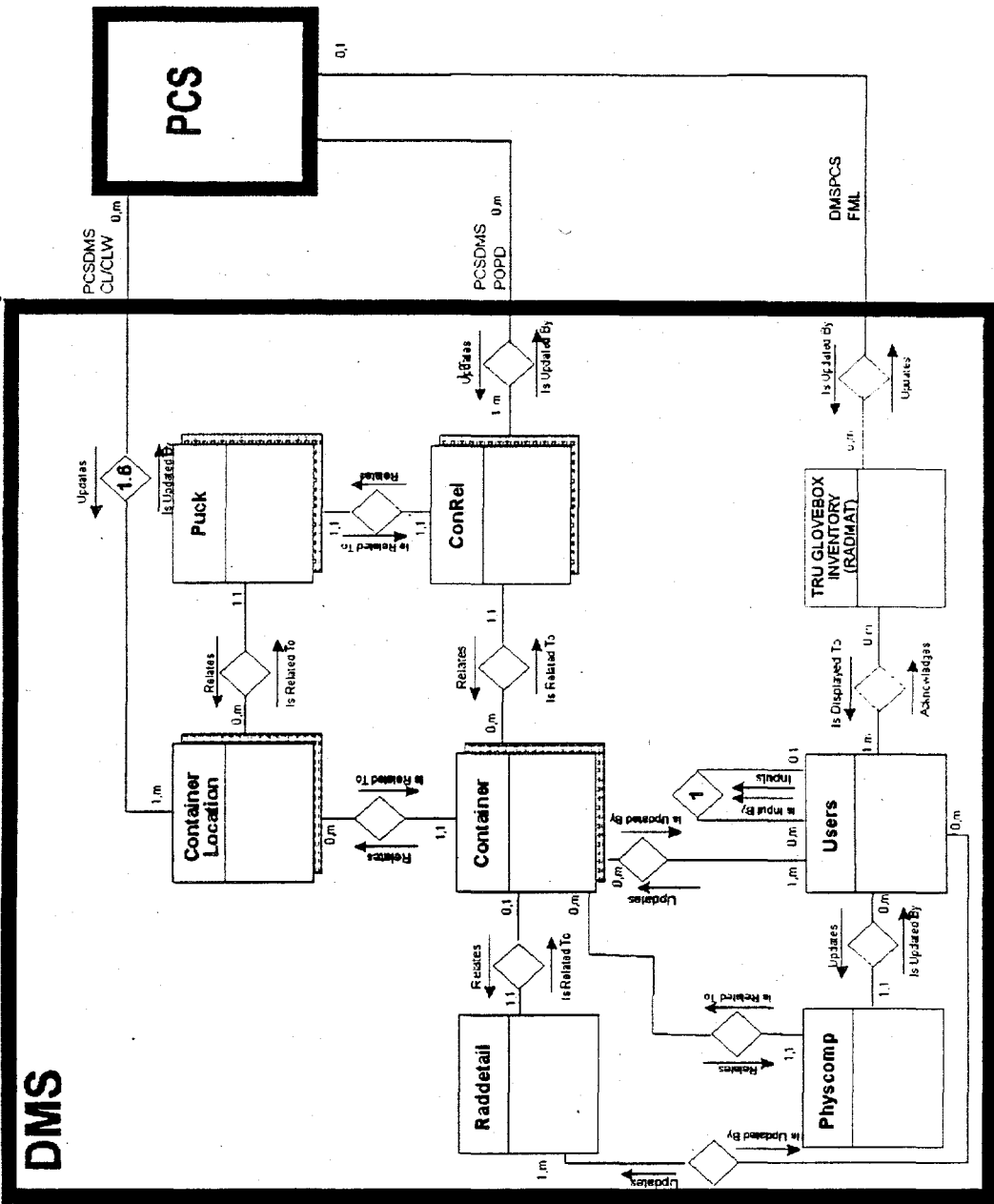


Figure D-4. RM-3.1.3 LLW Process Glovebox (Continued).

RELATIONSHIP MODEL

3.1.6 Process Routing and Pick Lists

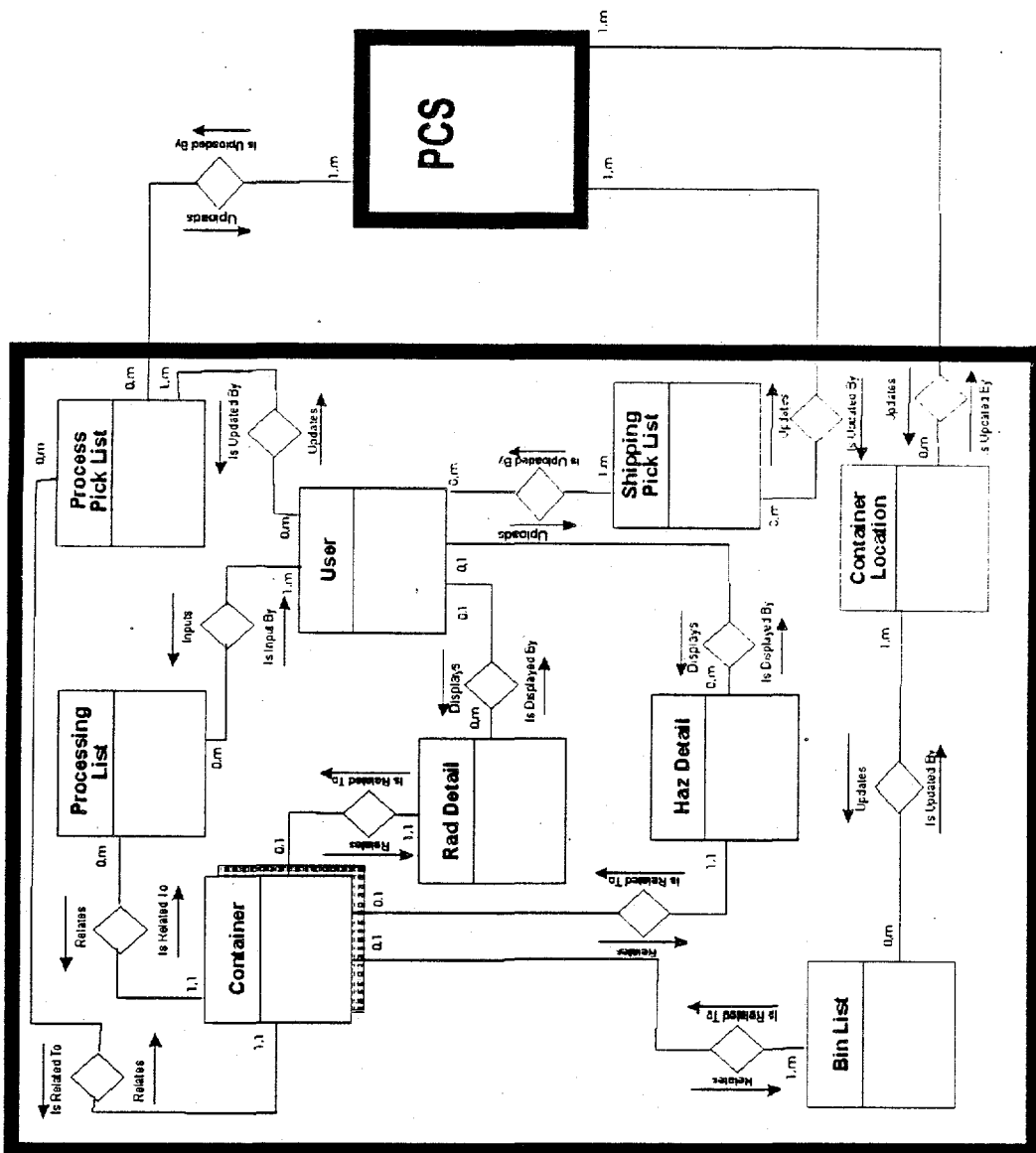


Figure D-5. RM-3.1.6 Process Routing and Picklists.

APPENDIX E

WRAP 1 DMS COMMUNICATIONS MESSAGE HANDLER

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CONTENTS

E.1	WRAP 1 DMS COMMUNICATIONS MESSAGE HANDLER	E-1
E.1.1	DMSCOM Source Files	E-1
E.1.2	Testing Requirements	E-2
E.1.3	DMSCOM Simulator Files	E-3
E.1.4	DMSCOM Data Dictionary	E-3
E.2	WRAP 1 DMS LOCATION TRACKING	E-7
E.2.1	Off-Page Connectors	E-7
E.2.2	Messages	E-8
E.2.3	Location Tracking Diagram Details	E-14
E.2.3.1	Boxes (Figure A)	E-14
E.2.3.2	Waste Drum Shipping/Receiving (Figure B)	E-16
E.2.3.3	Waste Drums in the NDE/NDA Area (Figure C)	E-18
E.2.3.4	LLW Drum Processing (Figure D)	E-21
E.2.3.5	TRU Drum Processing (Figure E)	E-25
E.2.3.6	Empty 85g Entry/Exit Drums (Figure G)	E-29
E.2.3.7	Empty One-Trip Drums and Empty 55g Entry/Exit Drums (Figure H)	E-31
E.2.3.8	Empty 85-Gallon D&S and Empty 55-Gallon Entry/Exit Drums (Figure I)	E-33
E.2.3.8.1	Empty 85-Gallon D&S Drums	E-33
E.2.3.8.2	Empty 55-Gallon E/E Drums	E-33
E.2.3.9	Background and Verification Drums (Figure J)	E-35
E.2.3.10	Samples, Purge Ports, and Pigs (Figure K)	E-37

TABLES

E-1.	DMSCOM Support Libraries	E-1
E-2.	DMSCOM Source	E-2
E-3.	Mock PCS Server Source	E-2
E-5.	Message Specific Types.	E-8

FIGURES

A.	WRAP 1 DMS Location Tracking - Boxes.	E-15
B.	WRAP 1 DMS Location Tracking - Waste Drum S/R.	E-17
C.	WRAP 1 DMS Location Tracking - Waste Drum NDE/NDA.	E-19
D.	WRAP 1 DMS Location Tracking - LLW Drum Processing.	E-22
E.	WRAP 1 DMS Location Tracking - TRU Drum Processing.	E-26
F.	(deleted)	
G.	WRAP 1 DMS Location Tracking - Empty 85G Entry/Exit Drums.	E-30
H.	WRAP 1 DMS Location Tracking - Empty One-Trip Drums.	E-32
I.	WRAP 1 DMS Location Tracking - Empty 85G D&S and Empty 55G Entry/Exit Drums.	E-34
J.	WRAP 1 DMS Location Tracking - Background & Verification Drums.	E-36
K.	WRAP 1 DMS Location Tracking - Samples, Purge Ports, and Pigs.	E-38

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E.1 WRAP 1 DMS COMMUNICATIONS MESSAGE HANDLER

This appendix provides a description of the WRAP DMS Communications (DMSCOM) message handler. It is the interface between the DMS and the BWAS, SIE and PCS. All of the messages for the WRAP DMS are received and sent through DMSCOM.

E.1.1 DMSCOM Source Files

Table E-1 provides a listing of the support libraries that DMSCOM uses and their function. Table E-2 lists the DMSCOM source code files and functions, and Table E-3 lists the mock PCS server code.

Table E-1. DMSCOM Support Libraries.

Library File	Function
error.c	handles errors that occur during the connection
tcpopen.c	establishes the connection
hosterror.c	prints out the TCP/IP error message value and string
chalmem.c	allocates memory for an array of strings
readn.c	reads the messages coming into DMSCOM
writen.c.	sends the messages to a socketq
systype.h	
netdefs.h	

These supporting library files¹ are used to establish the TCP connections to send and receive the messages.

¹Most of these library files were taken and modified from the book "UNIX Network Programming" by W. Richard Stevens.

Table E-2. DMSCOM Source.

Library File	Function
dmscom.c	establishes the connection with the desired service
dmsstrcli.c	the main menu (which will be removed on the final DMS simulator) which prompts for the message specific type that the user desires to send; also prompts for reading of all messages.
msgdmspcs.c	handles the messages from the DMS to the PCS
msgpcsdms.c	handles the messages from the PCS to the DMS
dms.h	
defines.h	
inet.h	

Table E-3. Mock PCS Server Source.

Library File	Function
pcsserv.c	reserves the TCP/IP port for communication and waits for a connection
pcsecho.c	brings up a menu showing which messages to send to the DMS; also has an option to read from the socket for receiving messages from the DMS
inet.h	
defines.h	
pcs.h	

The compiling of this source code is initiated by typing 'make msg'. The Makefile file will perform the compiling automatically. Changes will need to be made to the IP address in the 'inet.h' file if this code is compiled on a machine other than the WRAP project's wrapld machine. A library file is created and then DMSCOM and the mock PCS server are compiled and linked.

E.1.2 Testing Requirements

The DMSCOM simulator is the client portion of a communications interface for use by the Waste Receiving and Processing Facility (WRAP) Data Management System (DMS). This version 2.0 establishes a connection with the PCS only and passes messages back and forth between the DMS and PCS. In order to test DMSCOM, both DMSCOM and the PCS server will need to be executed in different shells on an HP-UX machine. After compiling both DMSCOM and PCSSERV, to test the messages perform the following UNIX commands in different shells: dmscom < test.dms from one shell and pcsserv < test.pcs in another shell. Messages will be displayed on the screen.

E.1.3 DMSCOM Simulator Files

The following is a listing of files used on this version of the DMSCOM simulator.

SCOM~TAR.Z	UNIX compressed tar file.
MAKEFILE	UNIX makefile used in compiling.
CHALMEM.C	Supporting library function which allocate char array function.
DEFINES.H	Global #define statements.
DMS.H	Global DMS include file.
DMSCOM.C	DMSCOM main function.
MSSTRCLI.C	DMSCOM's menu listing function.
ERROR.C	Supporting library, TCP/IP error handling function.
OSTERROR.C	Supporting library, TCP/IP connection error handling function.
INET.H	Include file with port numbers.
SGDMSPCS.C	DMSCOM's DMS to PCS message functions.
SGPCSDMS.C	DMSCOM's PCS to DMS message functions.
NETDEFS.H	Global network library include file.
PCS.H	Global PCS include file.
PCSECHO.C	PCS's menu and message functions.
PCSSERV.C	PCS server main function.
READN.C	Supporting library function which reads messages from a socket.
SYSTYPE.H	Global network library include file.
TCPOPEN.C	Supporting library function which opens a TCP/IP connection.
TEST.DMS	Test file for DMSCOM.
TEST.PCS	Test file for the mock PCS server.
WRITEN.C	Supporting library function which writes messages to a socket.

E.1.4 DMSCOM Data Dictionary

The DMSCOM Data Dictionary defines each of the files used by the DMSCOM. It also provides the functions within each file, along with each function's definition and, where applicable, SII² message type.

dmscom.c - The DMSCOM main function (in file 'dmscom.c' sets up the socket and calls functions to process messages. Once it connects to it's service, it will call the menuing function 'msgstrcli'.

dmsstrcli.c - Provides the DMSCOM menuing function.

msgstrcli:

Provides a list of specific messages that the DMS can send. Just select the number next to the specific message. It also provides an option for reading a message from the PCS. If the option is to read a message, function 'msgechocli' is called. The mock PCS server also uses this menuing system which has a number associated with the specific message type to be sent from the PCS.

²Waste Receiving and Processing (WRAP) Facility Plant Management System Network Communications Protocol Definition Document, Rev. 2.4, Systems Interface, Inc., Bothell, WA, 1995.

msgechocli

Reads incoming messages from the PCS. The general and specific message is read from the socket. From a list of specific messages (which are found in the dms.h file), msgechocli calls the correct function to handle that message.

null_pad

A supporting function which pads a string with nulls. That way all strings being sent across the socket are padded with nulls.

msgpcsdms.c - handles all the PCS to DMS messages.

pcsdms_container_location

PCSDMS-CL

Receives a container location update from the PCS. It pads the message array with nulls prior to reading the socket and moves the message into local variables. These variables are then printed to an output file or to the screen.

pcsdms_container_location_weight

PCSDMS-CLW

Receives a container location and weight update from the PCS. Again, it pads the message array with nulls prior to reading the socket and moves the message into local variables.

pcsdms_request_inner_drum_pin

PCSRDMS-RID

Receives a request for the inner drum PIN from the PCS.

drum_contamination_status

PCSDMS-DCS

Receives a drum contamination status from the PCS.

rw_packet_and_trnsfr_drum

PCSDMS-RWPT

Receives restricted waste PIN & transfer PIN relationship from the PCS.

rw_packet_and_parent_drum

PCSDMS-RWPP

Receives a restricted waste PIN and parent relationship from the PCS.

purge_port_location

PCSDMS-PPL

Receives a purge port location update from the PCS.

sample_and_parent_drumpack

PCSDMS-SPDP

Receives a sample PIN & parent PIN relationship from the PCS.

sample_and_purge_port

PCSDMS-SPP

Receives a sample PIN & purge port PIN relationship from the PCS.

purge_port_and_transfer_pig

PCSDMS-PPTP

Receives a purge port PIN & transfer PIG PIN relationship from the PCS.

puck_weight_addtion

PCSDMS-PWA

Receives a puck weight & location from the PCS.

puck_and_overpack_drum

PCSDMS-POPD

Receives a puck PIN and overpack PIN relationship from the PCS.

remove_from_transfer_stand

PCSDMS-REMT

Receives a remove a PIN from the transfer stand message from the PCS.

add_to_transfer_stand	PCSDMS-ADDT
Receives an add to transfer stand message from the PCS.	
non_compliant_item_and_packet	PCSDMS-NCIP
Receives a non-compliant PIN and PIN relationship from the PCS.	
aerosol_can_and_container	PCSDMS-ACC
Receives an aerosol PIN and collection PIN relationship from the PCS.	
non_compliant_item_treated	PCSRDMS-NCIT
Receives a request DMS display instructions from the PCS.	
treat_sample_and_purge_port	PCSDMS-TRSP
Receives a sample PIN and purge port PIN relationship from the PCS.	
treat_contain_and_item_contain	PCSDMS-TCIC
Receives a treatment PIN and PIN relationship from the PCS.	
treat_contain_and_load_drum	PCSDMS-TCLD
Receives a treatment PIN and loadout PIN relationship from the PCS.	
packet_assay_monitor_results	PCSDMS-PAMR
Receives results from TRU assay from the PCS.	
pcsdms_request_status_dms	PCSRDMS-RDMS
Receives a request for status of the DMS.	
pcsdms_request_status_sie	PCSRDMS-RSIE
Receives a request for status of the SIE.	
pcsdms_request_status_bwaa	PCSRDMS-RBWA
Receives a request for status of the BWAS.	
pcsdms_status_pcs	PCSDMS-SPCS
Receives a request for status of the PCS.	
pcsdms_request_container_database	PCSRDMS-RCDB
Receives a request for database information on PIN.	

msgdmspcs.c - handles all the DMS to PCS messages.

dmspcs_container_location	DMSPCS-CL
Sends a container location update to the PCS. It will set the message to nulls, call the Oracle database and move the data into the message array prior to writing the message to the socket.	
dmspcs_fissile_material_level	DMSPCS-FML
Sends the fissile material level to the PCS.	
dmspcs_processing_pick_list_item	DMSPCS-PPLI
Sends processing pick list items to the PCS.	

dmspcs transfer_car_pick_list	DMSPCS-TCPL
Transfers car pick list item to the PCS.	
dmspcs llw_shipping_pick_list	DMSPCS-LSPL
Sends the LLW shipping pick list item to the PCS.	
dmspcs tru_shipping_pick_list	DMSPCS-TSPL
Sends TRU shipping pick list item to the PCS.	
dmspcs trupack_assembly_pick_list	DMSPCS-TAPL
Sends TRUPACK assembly pick list item to the PCS.	
dmspcs bwassay_started	DMSPCS-BAS
Sends BWAS assay started message to the PCS.	
dmspcs bwassay_aborted	DMSPCS-BAA
Sends BWAS assay aborted message to the PCS.	
dmspcs bwassay_completed	DMSPCS-BAC
Sends the BWAS assay complete message to the PCS.	
dmspcs status_bwassay	DMSPCS-SBWA
Sends the status of the BWAS system to the PCS.	
dmspcs status_dms	DMSPCS-SDMS
Sends the status of the DMS to the PCS.	
dmspcs status_sie	DMSPCS-SSIE
Sends the status of the SIE to the PCS.	
dmspcs criticality_alert	DMSPCS-CRIT
Sends the PCS a criticality alert message.	
dmspcs request_status_pcs	DMSRPCS-RPCS
Sends a request for status of the PCS.	
dmspcs container_dbase_info	DMSPCS-CDBI
Sends the container database into to the PCS.	
dmspcs facility_curie_level	DMSPCS-FCL
Sends the facility curie level to the PCS.	
dmspcs overpack_weight_exceeds_limits	DMSPCS-OWEL
Sends the puck overpack weight exceeds limit message to the PCS.	
dmspcs overpack_cumulative_weight	DMSPCS-OCW
Sends the overpack cumulative weight to the PCS.	

E.2 WRAP 1 DMS LOCATION TRACKING

The WRAP 1 DMS Location Tracking diagrams (Figures A-K) show the sequence of locations for the various types of WRAP 1 containers as tracked by the DMS. The figures show the routes for various types of drums and boxes from arrival at the WRAP 1 receiving dock to departure from the shipping dock. The figures also show the messages between the PCS and DMS at each location used in tracking container locations and container relationships.

Each figure shows the movement of containers with similar routes. For drums containing waste, separate figures are used for shipping/receiving, NDE/NDA, LLW processing, and TRU processing. The large letter in the lower left corner of each figure is the figure label, which is used to identify the figure in any off-page connectors.

Each vertical line represents a container location in WRAP 1, with the name at the top of the line being the location name used in messages between the DMS and PCS. Multiple locations which perform the same function (e.g., NDE A and NDE B) are shown as a single line when a container will be routed to only one of the locations. The RWM glovebox sampling and treatment locations are shown in parenthesis with the corresponding glovebox entry ports (Figures D and E). These locations are used for sampling and treating packets removed from the transfer drums at the entry ports.

A dot on a line represents a container at that location. Arrows show movement of a container from one location to the next. The locations have been arranged so that movement is from left to right except where containers return to previous locations.

E.2.1 Off-Page Connectors

Off-page connectors are used to show container movement continuing on another page. The label on the connector is a combination of the label for the figure the container is moving to, and a sequential number for connectors on the figure (e.g., D1 for the first connector showing movement to Figure D).

In some cases the off-page connector links to a figure where there is a change in use for the drum. For example, an empty drum at a glovebox port becomes a product drum and waste is added, or an overpack is emptied at a glovebox port. In these cases, the off-page connectors are shown attached to the lines since the container remains in the same location. In other cases, the off-page connectors are used to show movement between two areas of the plant (e.g. NDE/NDA to processing). In these cases, the off-page connectors represent container movement and connect arrow segments on the two figures.

E.2.2 Messages

The messages between the PCS and DMS which are used to track container locations and container relationships are shown at the bottom of the figures. Message Specific Types for any messages from the PCS to the DMS (Message General Types = PCSDMS and PCSRDMS) are shown to the left of the location line and the Message Specific Types for any messages from the DMS to the PCS (Message General Type = DMSPCS) are shown at the right of the location line. For the RWM glovebox entry port locations (Figures D and E), any messages associated with the sampling or treatment locations are shown in parenthesis.

Table E-4. Message General Types.

Message	Description
BWADMS	BWAS data to DMS
DMSBWA	DMS data to BWAS
DMSPCS	DMS data to PCS
DMSRBWA	DMS request to BWAS
DMSRSIE	DMS request to SIE
DMSSIE	DMS data to SIE
PCSDMS	PCS data to DMS
PCSRDMS	PCS request to DMS
SIEDMS	SIE data to DMS

Table E-5. Message Specific Types.

Message General Type	Message Specific Type	Description of Specific Message Type
BWADMS	BAA	BWAS assay aborted
BWADMS	BAC	BWAS assay completed
BWADMS	BAS	BWAS assay started
BWADMS	CRIT	criticality alert
BWADMS	NLLL	NLLL nuclides detected
BWADMS	RESS	results from BWAS
BWADMS	SBWA	status of BWAS
DMSBWA	DD	drum database
DMSPCS	BAA	BWAS assay aborted
DMSPCS	BAC	BWAS assay completed
DMSPCS	BAS	BWAS assay started
DMSPCS	CL	container location

Message General Type	Message Specific Type	Description of Specific Message Type
DMSPCS	CRIT	criticality alert
DMSPCS	FCL	facility curie level
DMSPCS	FML	fissile material level
DMSPCS	LSPL	LLW shipping pick list
DMSPCS	PPLI	processing pick list items
DMSPCS	SBWA	status of BWAS
DMSPCS	SDMS	status of DMS
DMSPCS	SSIE	status of SIE
DMSPCS	TAPL	TRUPACT assembly pick list
DMSPCS	TCPL	transfer car pick list
DMSPCS	TSPL	TRU shipping pick list
DMSRBWA	ABWA	abort BWAS
DMSRBWA	RBWA	request status of BWAS
DMSRSIE	RSIE	request status of SIE
DMSRSIE	SDG	send database to GEA
DMSRSIE	SDP	send database to PAN
DMSSIE	DD	drum database
PCSDMS	ACC	aerosol can and container
PCSDMS	ADDT	add to transfer stand
PCSDMS	CL	container location
PCSDMS	CLW	container location and weight
PCSDMS	DCS	drum contamination status
PCSDMS	NCIP	non-compliant item and packet
PCSDMS	NCIT	non-compliant item for treatment
PCSDMS	PAMR	packet assay monitor results
PCSDMS	POPD	puck and overpack drum
PCSDMS	PPL	purge port location
PCSDMS	PPTP	purge port and transfer pig
PCSDMS	REMT	remove from transfer stand
PCSDMS	RWPP	RW packet and parent drum
PCSDMS	RWPT	RW packet and transfer drum

Message General Type	Message Specific Type	Description of Specific Message Type
PCSDMS	SPCS	status of PCS
PCSDMS	SPDP	sample and parent drum or packet
PCSDMS	SPP	sample and purge port
PCSDMS	TAC	TRUPACT assembly complete
PCSDMS	TCIC	treatment container and item container
PCSDMS	TCLD	treatment container and loadout drum
PCSDMS	TRSP	treatment sample and purge port
PCSRDMS	ABWA	abort BWAS
PCSRDMS	RBWA	request status of BWAS
PCSRDMS	RDMS	request status of DMS
PCSRDMS	RSIE	request status of SIE
SIEDMS	CRIT	criticality alert
SIEDMS	NLLL	NLLL nuclides detected
SIEDMS	RESS	results from SIE
SIEDMS	SSIE	status of SIE

Table E-6. WRAP Module 1 Locations Used In PCS/DMS Messages.

String Acronym	Location	PCS to DMS Messages	DMS to PCS MESSAGES
ACCVYR	TRUPACT Payload Accumulation Conveyor 101-CV-05-104	CL	
AGVGEAC_A	AGV P&D at Conveyor 104-CV-09-101E (for GEA_A)	CL (Dropoff)	
AGVGEAC_B	AGV P&D at Conveyor 104-CV-09-101F (for GEA_B)	CL (Dropoff)	
AGVHOLDPNT	On AGV at Hold Point Loc. At West End Of Proc. Glovebox Lines	CL	
AGVPANC_A	AGV P&D at Conveyor CV-09-101C (for PAN A)	CL	
AGVPANC_B	AGV P&D at Conveyor CV-09-101D (for PAN B)	CL	
AIRCVYR_A1	Airlock Conveyor In NDE/NDA Area (Xfr To Process) CV-09-103A	CL	
AIRCVYR_A2	Airlock Conveyor In Airlock (Xfr To Process) CV-09-104A	CL	
AIRCVYR_A3	Airlock Conveyor In Process (Xfr To Process) CV-09-201A	CL or CLW	

String Acronym	Location	PCS to DMS Messages	DMS to PCS MESSAGES
AIRCVYR_B1	Airlock Conveyor In Process Area (Xfr To NDE/NDA) CV-09-201B	CLW or CL	
AIRCVYR_B2	Airlock Conveyor In Airlock (Xfr To NDE/NDA) CV-09-104B	CL	
AIRCVYR_B3	Airlock Conveyor In NDE/NDA Area (Xfr To NDE/NDA) CV-09-103B	CL	
AS_RS	AS/RS Location	CL	
BDCVYR_A	Background Drum Storage Conveyor 104-CV-09-105A	CL	
BDCVYR_B	Background Drum Storage Conveyor 104-CV-09-105B	CL	
BOXNDA	Box NDA Unit In The NDE/NDA Area	CL	CRIT
BOXNDE	Box NDE Unit In The NDE/NDA Area	CLW	
DISCHCVR	S&R Drum Discharge Conveyor 101-CV-05-102	CL	
DISCHCVRW	S&R Drum Discharge Conveyor with Weigh Scale 101-CV-05-103B	CLW	
EMPSTR	Empty Drum Storage Area (On South Side Of AS/RS Shield Wall)	CL	
EMPINFDCVR	Empty Drum Infeed Conveyor 101-CV-05-105	CL	
GEA_A	Eastern GEA Unit 104-ND-06-102A	CL	CRIT
GEA_B	Western GEA Unit 104-ND-06-102B	CL	CRIT
INFDCVYRW	S&R Drum Weigh Scale Conveyor 101-CV-05-105A	CLW	
IN_TRANSIT	Waste Containers That are In Transit From WRAP 1		CL
LLW_COMPCT	LLW Supercompactor Entry	CL	
LLW_ENTRY	LLW Entry Glovebox Port/Lift Table LT-09-202A	CL DCS	CL
LLW_EXIT	LLW Exit Glovebox Loadout Position/Lift Table LT-09-202C	CL POPD	
LLW_PP	Exterior Of LLW Sorting Glovebox At Purge Port Location	PPL PPTP	
LLW_PUCK	LLW Exit Glovebox Puck Receipt Position	CLW	
LLW_RWMPRT	LLW Transfer Port/Lift Table For RWM Transfer Drums LT-09-203A	CL	
LLW_SORT	LLW Sorting Glovebox	CL RWPP RWPT SPDP SPP	

String Acronym	Location	PCS to DMS Messages	DMS to PCS MESSAGES
LLW_STORE1	LLW Exit Glovebox Puck Storage Location #1	CL	
LLW_STORE2	LLW Exit Glovebox Puck Storage Location #2	CL	
LLW_STORE3	LLW Exit Glovebox Puck Storage Location #3	CL	
LLWRW_PP	LLW RWM Glovebox Purge Port Location	PPL PPTP	
LLWRWCMPLE	LLW RWM Compliant Waste Loadout Port/Lift Table LT-09-201E	CL	
LLWRWENTRY	LLW RWM Transfer Drum Port/Lift Table LT-09-201F	CL	
LLWRWEXIT	LLW RWM Treated Waste Loadout Port/Lift Table LT-09-201D	CL	
LLWRWSAMPL	LLW RWM Glovebox Sample Location	REMT NCIP ACC SPDP ADDT SPP	
LLWRWTREAT	LLW RWM Glovebox Treatment Location	NCIT TRSP TCIC TCLD ADDT	
NDE_A	Eastern NDE Unit 104-ND-06-104A	CL	
NDE_B	Western NDE Unit 104-ND-06-104B	CL	
N_NCRSL	NDE/NDA Carousel 104-CV-09-102	CL	
PAN_A	Eastern PAN Unit 104-ND-06-101A	CL	CRIT
PAN_B	Western PAN Unit 104-ND-06-101B	CL	CRIT
PSTND	AS/RS Pallet Stand	CL (Exit)	
RECDCK	Wrap 1 Receiving Dock	CL	CL
RWM_CRSL	RWM Carousel In Processing Area 107-CV-09-202	CL	
SHIPEMPSTR	Storage Area For Excess 85-Gallon Drums	CL	
SHPDCK	WRAP 1 Shipping Dock	CL	
SIE	SIE Computer System (System Integration Equipment)		CRIT
STGCVR_85G	85-Gallon D&S Drum Staging Conveyor 107-CV-09-203	CL	
STGCVR_55G	55-Gallon One Trip Drum Staging Conveyor 107-CV-09-204	CL	

String Acronym	Location	PCS to DMS Messages	DMS to PCS MESSAGES
SWBSTR	SWB Storage Area On South Side Of As/Rs Shield Wall	CL	
TPSTAND	TRUPACT Payload Staging Pallet Stand (Next To Discharge Conveyor)	CL	
TRU_COMPCT	TRU Empty Drum Compaction Loadout Port/Lift Table LT-09-203C	CL (85G) CL (CPT)	
TRU_ENTRY	TRU Entry Glovebox Port/Lift Table LT-09-202B	CL DCS	CL
TRU_LDOUT1	TRU Exit Glovebox Loadout Position #1/Lift Table LT-09-202D	CL	
TRU_LDOUT2	TRU Exit Glovebox Loadout Position #2/Lift Table LT-09-202E	CL	
TRU_PP	Exterior Of TRU Sorting Glovebox At The Purge Port Location	PPL PPTP	
TRU_RWMPRT	TRU Transfer Port/Lift Table For RWM Transfer Drums LT-09-203B	CL	
TRU_GLVEBX	Entire TRU Glovebox (for fissile material alarms)		FML
TRURWGB	Entire TRU RWM Glovebox (for fissile material alarms)		FML
TRU_SORT	TRU Sorting Glovebox	CL PAMR RWPP RWPT SPDP SPP	
TRUBAY	TRUPACT Shipping Bay Location For SWB Staging	CL	
TRURWCMPLT	TRU RWM Compliant Waste Loadout Port/Lift Table LT-09-201B	CL	
TRURWENTRY	TRU RWM Transfer Drum Port/Lift Table LT-09-201C	CL	
TRURWEXIT	TRU RWM Treated Waste Loadout Port/Lift Table LT-09-201A	CL	
TRURWSAMPL	TRU RWM Glovebox Sample Location	REMT NCIP ACC SPDP ADDT SPP	
TRURW_PP	TRU RWM Glovebox Purge Port Location	PPL PPTP	

String Acronym	Location	PCS to DMS Messages	DMS to PCS MESSAGES
TRURWTREAT	TRU RWM Glovebox Treatment Location	NCIT TRSP TCIC TCLD ADDT	
XFRCAR	AS/RS Transfer Car	CL (Exit)	

E.2.3 LOCATION TRACKING DIAGRAM DETAILS

This section provides a narrative of the facility operations (location) flow for each of the location tracking diagrams. Each narrative also identifies the related Process Model (see Appendix F of the *WRAP 1 DMS SDD*).

E.2.3.1 Boxes (Figure A)

Boxes are received on the WRAP 1 Receiving Dock and scanned with the barcode scanner. The PCS will send the DMS a CL (Container Location) message with the Package ID and location Receiving Dock (RECDCK). Upon completion of the receiving inspections, the boxes are placed into a storage location which may be on the south side of the AS/RS or the south wall of the facility in the S&R Area where they are scanned by a barcode scanner. The PCS will send the DMS a CL message with the Package ID and a location Box Storage (SWBSTR).

Once the boxes are ready for examination, they will be transported to the box NDE unit where they will be weighed. The PCS will send the DMS a CLW (Container Location and Weight) message with the Package ID, container weight, and a location Box NDE (BOXNDE).

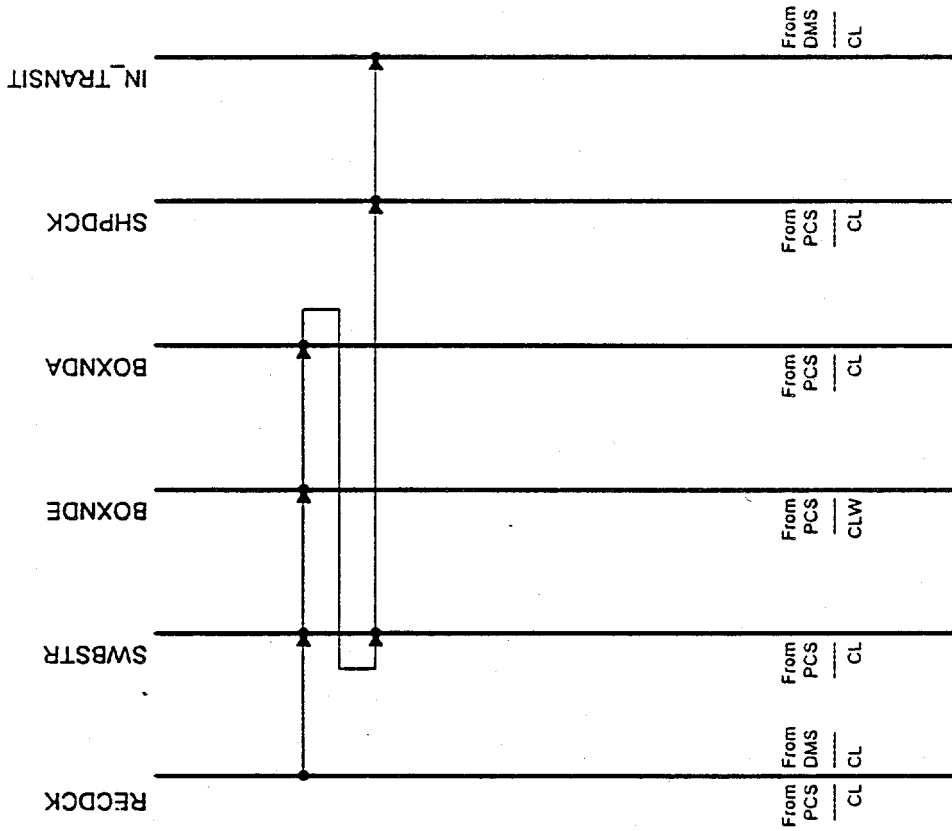
Upon completion of the box NDE exam, the boxes will be transported to the Boxed Waste Assay (BWAS) unit for assay analysis and scanned with the barcode scanner. The PCS will send a CL message to the DMS with the Package ID and location Box NDA (BOXNDA).

After the BWAS unit is finished with its examination, the boxes will be transported back to the Box Storage Area where they will be scanned with the barcode scanner. The PCS will then send a CL message to the DMS with the Package ID and location Box Storage (SWBSTR).

When the shipping manifests and shipping documentation is completed, the boxes will be moved to the shipping dock and scanned with the barcode scanner. The PCS will send a CL message to the DMS with the Package ID and location Shipping Dock (SHPDCK). They will then be loaded onto a shipping vehicle. Once the boxes leave the facility, the DMS will send a CL message to the PCS with the Package ID and the location to "In Transit" (IN_TRANSIT).

- Process Model: See Process Model Unit Process 3.1.8.1, "Box or Drum Inventory"

WRAP 1 DMS LOCATION TRACKING - BOXES



FIGURES

- A - BOXES
- B - WASTE DRUM SHIPPING/RECEIVING
- C - WASTE DRUM NDE/NDA
- D - LLW DRUM PROCESSING
- E - TRU DRUM PROCESSING
- G - EMPTY 85G ENTRY/EXIT DRUMS
- H - EMPTY ONE-TRIP DRUMS AND
- I - EMPTY 55G ENTRY/EXIT DRUMS
- J - EMPTY 85G D&S DRUMS
- K - BACKGROUND & VERIFICATION DRUMS
- SAMPLES, PURGE PORTS, & PIGS

Figure A. WRAP 1 DMS Location Tracking - Boxes.

E.2.3.2 Waste Drum Shipping/Receiving (Figure B)

Waste drums are received on the WRAP 1 Receiving Dock. The Package ID of each waste drum will be scanned by a barcode scanner, and the set of Package IDs will be sent from the PCS to the DMS as part of a CL (Container Location) message. Upon completion of the receiving inspections, the Package IDs will be validated on SWITS and the Facility Curie Level calculated and displayed. The Facility Curie Level will also be checked to see if it exceeds the Facility Alarm Level; if so, an alarm will be displayed. Waste drums can be removed from the received set until the Facility Curie Level drops below the alarm level, or the whole received set can be rejected. When the user is satisfied with the received set of waste drums, the drum data will be downloaded from SWITS to the DMS database and the Package IDs of the accepted waste drums will be sent to the PCS in a CL message.

The forklift operator will place a received pallet on the pallet stand and command the AS/RS to store the pallet by scanning the waste drums with the barcode scanner. The waste drums will then be stored in the AS/RS, with a CL message from the PCS to the DMS showing a location (AS_RS), a bin number where each drum is stored in the AS/RS, and the Package IDs (up to four) of the waste drums on the pallet.

To start the processing of waste drums, a pick list is sent to the PCS. As the forklift operator requests waste drums from the AS/RS, the first set of waste drums on a pallet from the top of the pick list will be delivered to the pallet stand with a CL message from the PCS to the DMS listing the Package IDs and a location pallet stand (PSTND). The forklift operator will deliver the pallet to the infeed conveyor location.

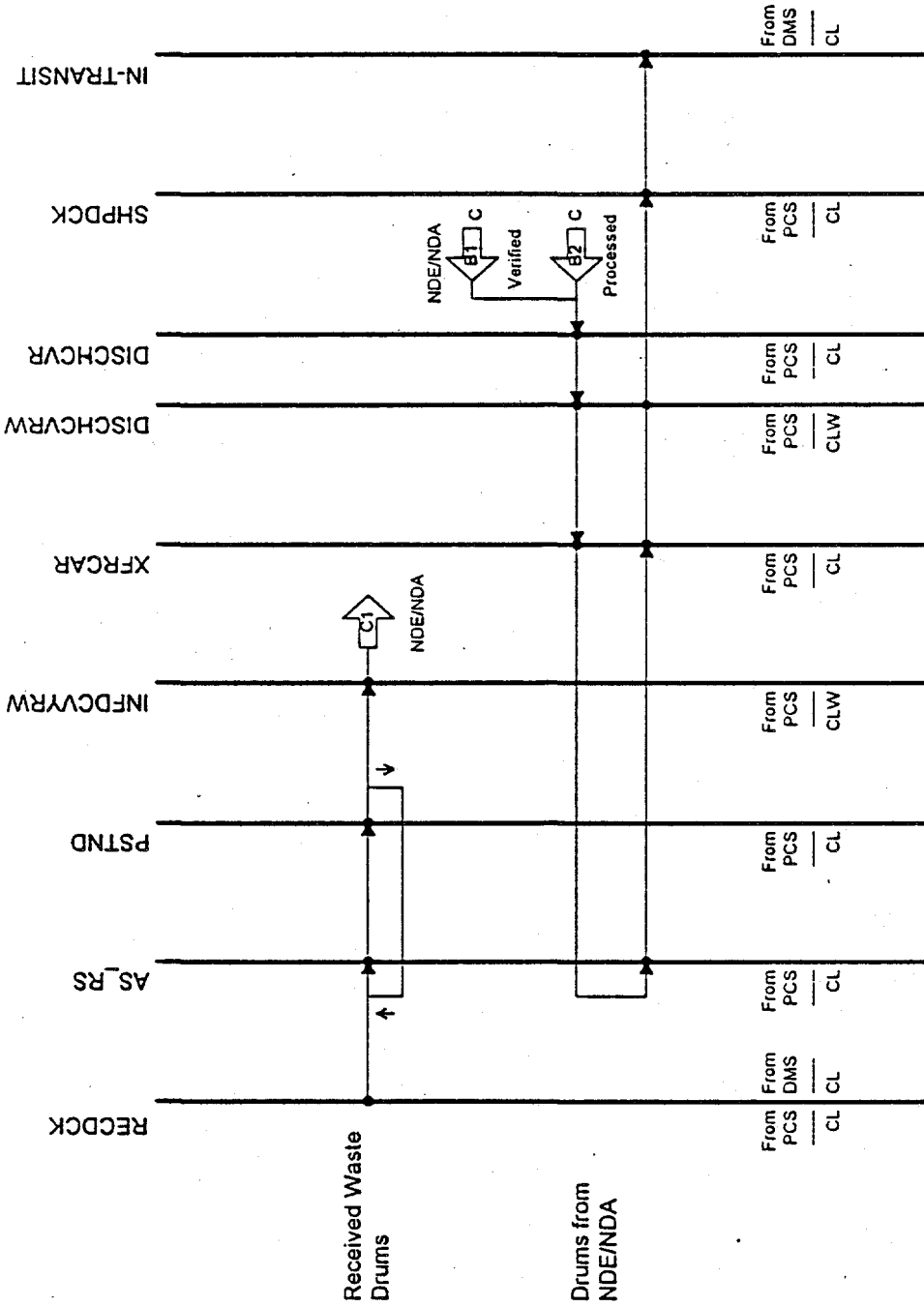
The infeed operator will place the individual waste drums on the infeed conveyor. When the waste drums reach the conveyor scale, a CLW (container location with weight) message will be sent to the DMS with the Package ID, drum weight, and location infeed conveyor (INFDCVYRW). The waste drum will be picked up by an AGV (Automatic Guide Vehicle) and transported to the NDE/NDA area.

Waste drums returning from the NDE/NDA area will be delivered to the discharge conveyor by the AGV. When it is off loaded on to the discharge conveyor, a CL message will be sent by the PCS to the DMS with the Package ID and location discharge conveyor (DISCHCVR). When the waste drum arrives at the weight scale end of the discharge conveyor, the PCS sends the DMS a CLW message with the Package ID, drum weight, and location discharge conveyor (DISCHCVRW).

The discharge conveyor operator will place the drums on a pallet on the transfer car. When the pallet is full, the operator will command the AS/RS to store the pallet by scanning the waste drums with the barcode scanner. The PCS will send the DMS a CL message with the Package IDs of the drums on the pallet and the location transfer car (XFRCAR). The AS/RS will pick up the pallet and store it in a bin location. The PCS will send the DMS a CL message with the waste drum Package IDs, bin number, and location AS/RS (AS_RS).

When it is time to ship a set of drums, a shipping pick list will be sent by the DMS to the PCS. When the forklift operator requests a shipping pallet from the AS/RS, the AS/RS will deliver the first set of drums on the

WRAP 1 DMS LOCATION TRACKING - WASTE DRUM S/R



shipping pick list to the transfer car and the PCS send the DMS a CL message with the Package IDs of the waste drums on the pallet and a location transfer car (XFRCAR). The fork lift operator will position the pallets at the shipping dock. When they are all assembled, the operator will scan all of the waste drums in the shipment with the barcode reader and the PCS will send the DMS a CL message with the set of Package IDs in the shipment with a location shipping dock (SHPDCK).

When the shipping papers are complete and the waste drums loaded on the transport, the DMS will send the PCS a CL message with the Package IDs of the waste drums leaving in this shipment and a location In-Transit (IN_TRANSIT).

- Process Model: See Process Model Unit Process 3.1.8.1, "Box or Drum Inventory"

E.2.3.3 Waste Drums in the NDE/NDA Area (Figure C)

The AGV will deliver a waste drum to one of the two NDE (Non-Destructive Evaluation) vaults. When the waste drum is delivered to the NDE vault, the PCS will send the DMS a CL message with the Package ID and a location of NDE vault A (NDE_A) or NDE vault B (NDE_B).

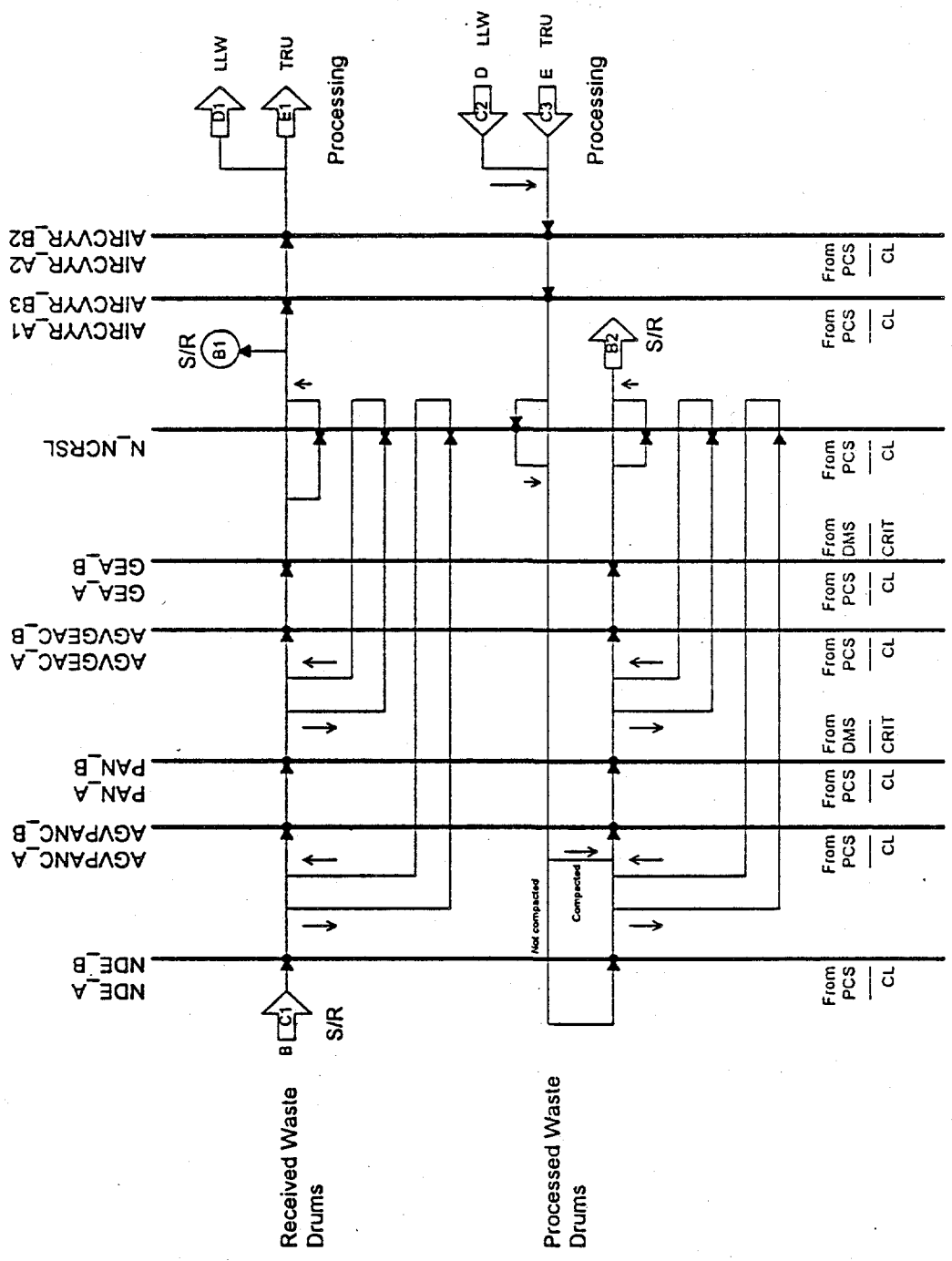
When the NDE operation is finished, the AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or, the AGV will deliver it to one of the two PAN (Passive-Active Neutron) vaults and the PCS will send the DMS a CL message with the Package ID and location PAN location A (AGVPANC_A) or PAN location B (AGVPANC_B) when the waste drum arrives. The PCS will send a second CL message with the Package ID and location PAN vault A (PAN_A) or PAN vault B (PAN_B) when the waste drum is loaded into the vault.

When the PAN operation is finished, the AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or the AGV will deliver it to one of the two GEA (Gamma Energy Assay) vaults and the PCS will send the DMS a CL message with the Package ID and location GEA location A (AGVGEAC_A) or GEA location B (AGVGEAC_B) when the waste drum arrives. The PCS will send a second CL message with the Package ID and location GEA vault A (GEA_A) or GEA vault B (GEA_B) when the waste drum is loaded into the vault.

When the GEA operation is finished, the AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or, if the waste drum was only being verified, then the AGV will deliver it to the Shipping/Receiving area. If the waste drum is to be processed, the AGV will deliver it to the airlock conveyors.

Under normal operations the AGV will deliver the waste drum to the "A" conveyor which moves from the NDE/NDA area to the Process area. The PCS will send the DMS a CL message when the AGV off loads the waste drum to the first conveyor with the Package ID and location airlock conveyor A1 (AIRCVYR_A1). As the waste drum moves to the second airlock conveyor the PCS will send the

WRAP 1 DMS LOCATION TRACKING - WASTE DRUM NDE/NTA



DMS a second message with the Package ID and location airlock conveyor A2 (AIRCVR_A2).

Under abnormal operations, the AGV will deliver the waste drum to the "B" conveyor, which normally moves from the Process area to the NDE/NDA area but can be reversed if necessary. The PCS will send the DMS a CL message when the AGV off loads the waste drum to the first conveyor with the Package ID and location airlock conveyor B3 (AIRCVR_B3). As the waste drum moves to the second airlock conveyor the PCS will send the DMS a second message with the Package ID and location airlock conveyor B2 (AIRCVR_B2).

When a waste drum is finished in the Process area, it comes through the airlock conveyors to the NDE/NDA area. Under normal operations the waste drum will come through the "B" conveyor which moves from the Process area to the NDE/NDA area. The PCS will send the DMS a CL message when the waste drum arrives at the inner conveyor with the Package ID and location airlock conveyor B2 (AIRCVR_B2). As the waste drum moves to the last airlock conveyor the PCS will send the DMS a second message with the Package ID and location airlock conveyor B3 (AIRCVR_B3).

Under abnormal operations the waste drum will come through the "A" conveyor which normally moves from the NDE/NDA area to the Process area but can be reversed if necessary. The PCS will send the DMS a CL message when the waste drum arrives at the inner conveyor with the Package ID and location airlock conveyor A2 (AIRCVR_A2). As the waste drum moves to the last airlock conveyor the PCS will send the DMS a second message with the Package ID and location airlock conveyor A1 (AIRCVR_A1).

The AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or, if the waste drum was not compacted, then deliver it to one of the two NDE (Non-Destructive Evaluation) vaults. When the waste drum is delivered to the NDE vault, the PCS will send the DMS a CL message with the Package ID and a location of NDE vault A (NDE_A) or NDE vault B (NDE_B).

If the waste drum contains compacted waste or the NDE operation is finished, the AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or the AGV will deliver it to one of the two PAN (Passive-Active Neutron) vaults and the PCS will send the DMS a CL message with the Package ID and location PAN location A (AGVPANC_A) or PAN location B (AGVPANC_B) when the waste drum arrives. The PCS will send a second CL message with the Package ID and location PAN vault A (PAN_A) or PAN vault B (PAN_B) when the waste drum is loaded into the vault.

When the PAN operation is finished, the AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or the AGV will deliver it to one of the two GEA (Gamma Energy Assay) vaults and the PCS will send the DMS a CL message with the Package ID and location GEA location A (AGVGEAC_A) or GEA location B (AGVGEAC_B) when the waste drum arrives. The PCS will send a second CL

message with the Package ID and location GEA vault A (GEA_A) or GEA vault B (GEA_B) when the waste drum is loaded into the vault.

When the GEA operation is finished, the AGV will pick up the waste drum and deliver it to the NDE/NDA Drum Storage Carousel and the PCS will send a CL message to the DMS with the Package ID and location NDE/NDA Drum Storage Carousel (N_NCRSL). Or the AGV will deliver it to the Shipping/Receiving area.

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

E.2.3.4 LLW Drum Processing (Figure D)

Under normal operations, the waste drum enters the Process area through the "A" airlock from the NDE/NDA area. The PCS will send the DMS a CL message with the Package ID and location airlock A3 (AIRCVR_A3). Under abnormal operations, the waste drum will enter the Process area through the "B" airlock which can be reversed when necessary. The PCS will send a CL message to the DMS with the Package ID and a location airlock B1 (AIRCVR_B1).

The waste drum will be picked up by an AGV and transported to the LLW Process Glovebox. If the LLW Process Glovebox is not ready at this time, the waste drum may be temporarily stored in the RWM Storage Carousel. The PCS will send the DMS a CL message with the Package ID and a location RWM Storage Carousel (RWM_CRSL).

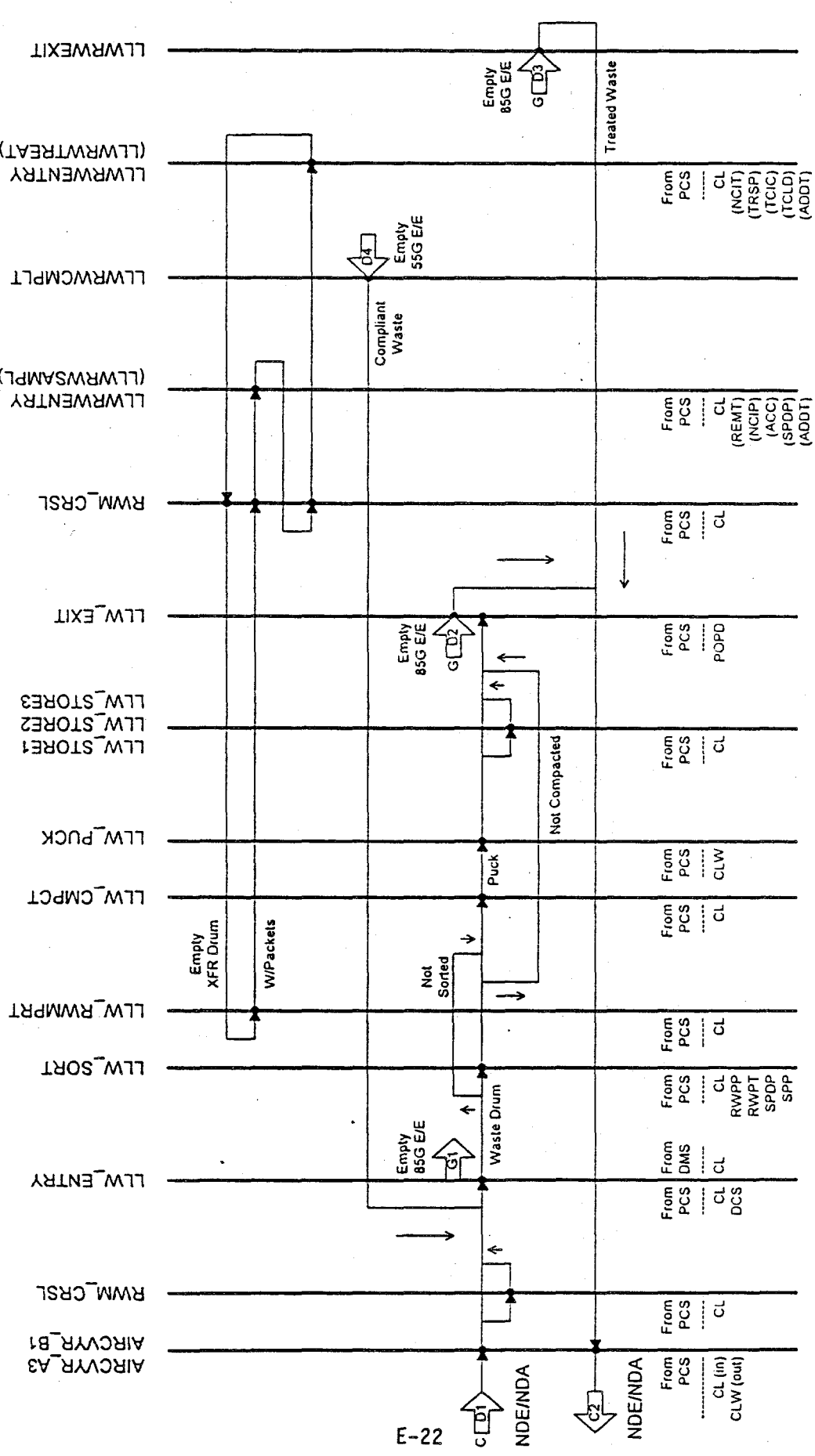
When the waste drum arrives at the LLW Process Glovebox, the PCS will send a CL message to the DMS with the Package ID and a location LLW Entry port (LLW_ENTRY). If the waste drum delivered is an overpack, then the DMS will send a CL message to the PCS with the Package ID of the inner waste drum and a location LLW Entry port (LLW_ENTRY). If the waste drum is the waste, then the DMS CL message to the PCS will be the same Package ID as originally received from the PCS and a location LLW Entry port (LLW_ENTRY).

If an 85-gallon overpack drum exists at the LLW Entry port, it will be examined to see if it is contaminated. If it is not contaminated, it will be shipped out of the facility to be used again as an overpack drum. If it is contaminated, it will be used in the Process area as a waste product drum. It could be moved to the LLW Exit port where the PCS will send a CL message with the Package ID and a location LLW Exit port (LLW_EXIT) or to the LLW RWM Exit port where the PCS will send a CL message with the Package ID and a location LLW RWM Exit port (LLWRWEXIT).

When the waste drum enters the LLW Process glovebox, it will be moved to the LLW Sorting glovebox if it is non-compliant and/or needs to be sampled. If neither apply, the waste drum will be sent directly to the super compactor where the PCS will send a CL message with the Package ID and a location compactor (LLW_CMPCT). If it stays at the LLW Sorting glovebox, the PCS will send a CL message to the DMS with the Package ID and a location LLW Sort glovebox (LLW_SORT).

The waste drum will be dumped onto the sort table where it will be sampled and/or the non-compliant packets removed. As samples are taken, they will be scanned by a barcode scanner and the PCS will send two types of

WRAP 1 DMS LOCATION TRACKING - LLW DRUM PROCESSING



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relationship messages to the DMS. The first is a sample to parent drum relationship (SPDP) message with the sample ID, parent drum Package ID and a location LLW Sort glovebox (LLW_SORT). The second is the sample to purge port relationship (SPP) message with the sample ID, the Purge Port ID and a location LLW Purge Port (LLW_PP).

If non-compliant packets are removed, they are barcoded and scanned with a barcode reader and the PCS will send two types of relationship messages to the DMS. The first is a packet to parent drum relationship (REPP) message with the packet ID, the parent drum Package ID and a location LLW Sort glovebox (LLW_SORT). The second is the packet to transfer drum relationship (RWPT) message with the packet ID, the transfer drum Package ID and a location LLW RWM Transfer Port (LLW_RWMPRT).

The remaining waste on the sort table will be returned to the waste drum and sent to the super compactor. The PCS will send a CL message to the DMS with the waste drum Package ID and a location compactor (LLW_CMPCT). After it is compacted, the PCS will send a CLW message to the DMS with the Puck ID, the Puck weight and a location Puck (LLW_PUCK).

From this location the Puck can be placed in one of three storage locations or go directly to the loadout drum. If it goes to storage, the PCS will send a CL message to the DMS with the Puck ID and a location LLW storage (LLW_STORE1, LLW_STORE2, LLW_STORE3). If it goes to the loadout drum, the PCS will send a Puck to overpack drum relationship (POPD) message with the Puck ID, Overpack drum Package ID and a location LLW Exit port (LLW_EXIT).

When the loadout drum is full, it will be sent to the Process area airlock to go to the NDE/NDA area. The PCS will send a CL message to the DMS when it arrives on the airlock BI with the drum Package ID and a location airlock A1 (AIRCVR_A1). Under abnormal circumstance, the drum will go to the B3 airlock which normally feeds drums to the Process area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVR_B3).

When the transfer drum is full, it will be disconnected from the LLW process glovebox and go to either the RWM carousel for temporary storage or the LLW RWM glovebox. If it goes to the RWM carousel, the PCS will send a CL message to the DMS with the transfer drum Package ID and a location RWM carousel (RWM_CRSL). If it goes to the LLW RWM glovebox, the PCS will send a CL message to the DMS with the transfer drum Package ID and a location LLW RWM entry port (LLWRWENTRY).

As packets are removed and scanned by the barcode reader, the PCS will send a Remove Item from Transfer Stand (REMT) message to the DMS with the transfer drum Package ID, packet ID and a location LLW RWM sample table (LLWRWSAMPL). As the packets are opened and sorted, the non-compliant items in the packet are barcode labeled and scanned. The PCS will send a non-compliant item to packet (NCIP) message to the DMS with the non-compliant item ID, packet ID and a location LLW RWM sample table (LLWRWSAMPL).

If the non-compliant item is an aerosol can, the aerosol can will be drained into a collection container and the PCS will send a aerosol can to collection container (ACC) relationship message to the DMS with the aerosol can ID, collection container ID and a location LLW RWM sample table

(LLWRWSAMPL). The non-compliant items are also sampled and as the samples are taken, the PCS send a Sample and Parent Drum/Packet (SPDP) relationship message to the DMS with the sample ID, packet ID and a location LLW RWM sort table (LLWRWSAMPL). The PCS will also send a sample to purge port (SPP) relationship message to the DMS with the sample ID, purge port ID and a location LLW RWM purge port (LLWRW_PP).

A 55-gallon drum will be connected to the LLW RWM compliant port, and the PCS will send the DMS a CL message with the Compliant drum Package ID and a location LLW RWM compliant port (LLWRWCMPLT). As the packets are opened and sorted, any compliant material found will be placed in the compliant loadout drum.

The non-compliant packets will be added back to the transfer drum and the PCS will send an Add Packet to Transfer drum (ADDT) relationship message to the DMS with the packet ID, transfer drum ID and a location LLW RWM entry port (LLWRWENTRY). When the transfer drum is full, it will go to the RWM carousel for temporary storage. The PCS will send a CL message to the DMS when it arrives at the RWM carousel with the transfer drum Package ID and a location RWM carousel (RWM_CRSL).

When it is time to treat the non-compliant packets, the transfer drum will be returned from the RWM carousel to the LLW RWM entry port. The PCS will send a CL message to the DMS with the transfer drum Package ID and a location LLW RWM entry port (LLWRWENTRY). The packets will be removed and scanned for treatment. The PCS will send a non-compliant item present for treatment (NCIT) message to the DMS with the packet ID and a location LLW RWM treatment table (LLWRWTREAT). As the packets are collected into a treatment container, the PCS will send a treatment container and item container (TCIC) relationship message to the DMS with the treatment container ID, item container ID and a location LLW RWM treatment table (LLWRWTREAT).

The corresponding samples will also be brought in by connecting the purge port to the LLW RWM glovebox. The PCS will send the DMS a CL message when the purge port is scanned at the LLW RWM purge port with the purge port ID and a location LLW RWM purge port (LLWRW_PP). As the samples are removed and scanned, the PCS will send the DMS a samples present for treatment (TRSP) message with the sample ID and a location LLW RWM treatment table (LLWRWTREAT). If they are also going into a treatment container, then the PCS will send the DMS a treatment container and item container (TCIC) relationship message with the treatment container ID, item container ID and a location LLW RWM treatment table (LLWRWTREAT).

When the treatment container is first scanned into the LLW RWM glovebox, the PCS will send the DMS a treatment container and loadout drum (TCIC) relationship message with the treatment container ID, loadout drum ID and a location LLW RWM exit port (LLWRWEXIT). When the treatment loadout drum is full, it can be sent to the LLW Process glovebox to be compacted. It would follow the path from the LLW entry port straight through to the compactor. It can also be sent to the Process area airlock to go to the NDE/NDA area. The PCS will send a CL message to the DMS when it arrives on the airlock B1 with the drum Package ID and a location airlock A1 (AIRCVYR_A1). Under abnormal circumstances, the drum will go to the B3 airlock, which normally feeds drums to the Process area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVYR_B3).

When the compliant loadout drum is full, it can be sent to the LLW Process glovebox to be compacted. It would follow the path from the LLW entry port straight through to the compactor. It can also be sent to the Process area airlock to go to the NDE/NDA area. The PCS will send a CL message to the DMS when it arrives on the airlock B1 with the drum Package ID and a location airlock A1 (AIRCVR_A1). Under abnormal circumstance, the drum will go to the B3 airlock which normally feeds drums to the Process area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVR_B3).

When the transfer drum is empty, it can go back to the LLW Process glovebox to be used again or go to the RWM carousel for temporary storage.

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

E.2.3.5 TRU Drum Processing (Figure E)

Under normal operations, the waste drum enters the Process area through the "A" airlock from the NDE/NDA area. The PCS will send the DMS a CL message with the Package ID and location airlock A3 (AIRCVR_A3). Under abnormal operations, the waste drum will enter the Process area through the "B" airlock which can be reversed when necessary. The PCS will send a CL message to the DMS with the Package ID and a location airlock B1 (AIRCVR_B1).

The waste drum will be picked up by an AGV and transported to the TRU Process Glovebox. If the TRU Process Glovebox is not ready at this time, the waste drum may be temporarily stored in the RWM Storage Carousel. The PCS will send the DMS a CL message with the Package ID and a location RWM Storage Carousel (RWM_CRSL).

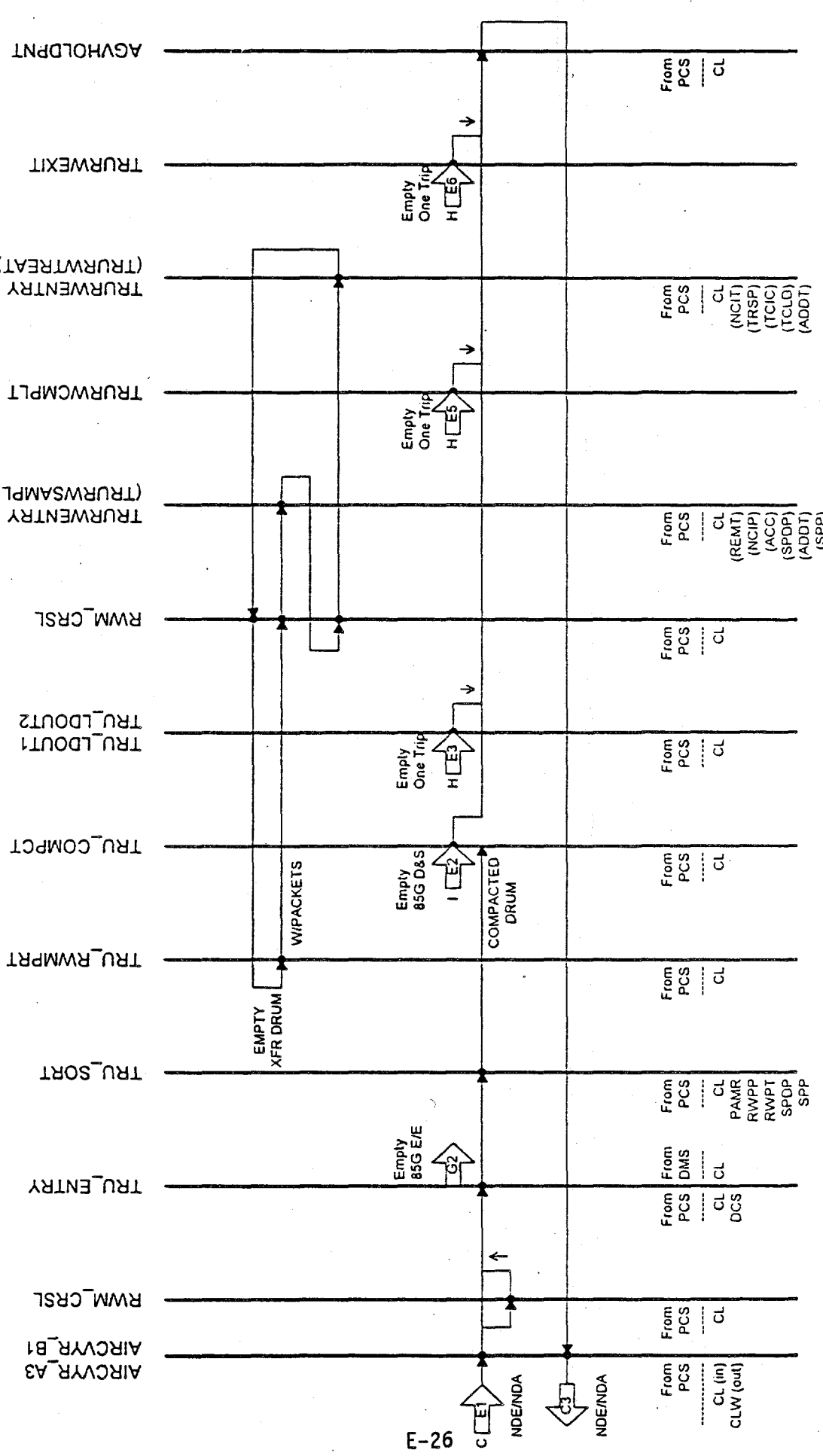
When the waste drum arrives at the TRU Process Glovebox, the PCS will send a CL message to the DMS with the Package ID and a location TRU Entry port (TRU_ENTRY). If the waste drum delivered is an overpack, then the DMS will send a CL message to the PCS with the Package ID of the inner waste drum and a location TRU Entry port (TRU_ENTRY). If the waste drum is the waste, then the DMS CL message to the PCS will be the same Package ID as originally received from the PCS and a location TRU Entry port (TRU_ENTRY).

If an 85-gallon overpack drum exists at the TRU Entry port, it will be examined to see if it is contaminated. If it is not contaminated, it will be shipped out of the facility to be used again as an overpack drum. If it is contaminated, it will be used in the Process area as a waste product drum. It could be moved to the LLW Exit port or to the LLW RWM Exit port.

When the waste drum enters the TRU Process glovebox, it will be moved to the TRU Sorting glovebox and dumped on the sorting table. At the TRU Sorting glovebox, the PCS will send a CL message to the DMS with the waste drum Package ID and a location TRU Sort glovebox (TRU_SORT).

The waste on the sort table will be sampled and/or the non-compliant packets removed. As samples are taken, they will be scanned by a barcode scanner and the PCS will send two types of relationship messages to the DMS. The first is a sample to parent drum relationship (SPDP) message with the sample ID, parent drum Package ID and a location TRU Sort glovebox (TRU_SORT).

WRAP 1 DMS LOCATION TRACKING - TRU DRUM PROCESSING



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The second is the sample to purge port relationship (SPP) message with the sample ID, the Purge Port ID and a location TRU Purge Port (TRU_PP).

If non-compliant packets are removed, they are barcoded and scanned with a barcode reader and the PCS will send two types of relationship messages to the DMS. The first is a packet to parent drum relationship (REPP) message with the packet ID, the parent drum Package ID and a location TRU Sort glovebox (TRU_SORT). The second is the packet to transfer drum relationship (RWPT) message with the packet ID, the transfer drum Package ID and a location TRU RWM Transfer Port (TRU_RWMPRT).

The remaining waste on the sort table will be distributed to the two TRU loadout drums. When the 55-gallon drums are connected to the TRU loadout ports, the PCS will send the DMS a CL message with the loadout drum Package ID and a location TRU loadout port (TRU_LDOUT1 or TRU_LDOUT2).

The empty waste drum will be compacted and put in the 85-gallon drum at the TRU compact port. The PCS will send a CL message to the DMS with the waste drum Package ID and a location TRU compact port (TRU_COMPCT). When the 85-gallon drum is connected to the TRU compact port, the PCS will send a CL message to the DMS with the 85-gallon drum Package ID and a location TRU compact port (TRU_COMPCT).

When a loadout drum is full, it will be sent to the Process area airlock to go to the NDE/NDA area. The PCS will send a CL message to the DMS when it arrives on the airlock B1 with the drum Package ID and a location airlock A1 (AIRCVYR_A1). Under abnormal circumstance, the drum will go to the B3 airlock which normally feeds drums to the Process area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVYR_B3).

When the transfer drum is full, it will be disconnected from the TRU process glovebox and go to either the RWM carousel for temporary storage or the TRU RWM glovebox. If it goes to the RWM carousel, the PCS will send a CL message to the DMS with the transfer drum Package ID and a location RWM carousel (RWM_CRSL). If it goes to the TRU RWM glovebox, the PCS will send a CL message to the DMS with the transfer drum Package ID and a location TRU RWM entry port (TRURWENTRY).

As packets are removed and scanned by the barcode reader, the PCS will send a Remove Item from Transfer Stand (REMT) message to the DMS with the transfer drum Package ID, packet ID and a location TRU RWM sample table (TRURWSAMPL). As the packets are opened and sorted, the non-compliant items in the packet are barcoded and scanned. The PCS will send a non-compliant item to packet (NCIP) message to the DMS with the non-compliant item ID, packet ID and a location TRU RWM sample table (TRURWSAMPL).

If the non-compliant item is an aerosol can, the aerosol can will be drained into a collection container and the PCS will send a aerosol can to collection container (ACC) relationship message to the DMS with the aerosol can ID, collection container ID and a location TRU RWM sample table (TRURWSAMPL). The non-compliant items are also sampled and as the samples are taken, the PCS send a Sample and Parent Drum/Packet (SPDP) relationship message to the DMS with the sample ID, packet ID and a location TRU RWM sort table (TRURWSAMPL). The PCS will also send a sample to purge port (SPP)

relationship message to the DMS with the sample ID, purge port ID and a location TRU RWM purge port (TRURW_PP).

A 55-gallon drum is connected to the TRU RWM compliant port and the PCS will send the DMS a CL message with the Compliant drum Package ID and a location TRU RWM compliant port (TRURWCPLT). As the packets are opened and sorted, any compliant material found will be placed in the compliant loadout drum.

The non-compliant packets will be added back to the transfer drum and the PCS will send an Add Packet to Transfer drum (ADDT) relationship message to the DMS with the packet ID, transfer drum ID and a location TRU RWM entry port (TRURWENTRY). When the transfer drum is full, it will go to the RWM carousel for temporary storage. The PCS will send a CL message to the DMS when it arrives at the RWM carousel with the transfer drum Package ID and a location RWM carousel (RWM_CRSL).

When it is time to treat the non-compliant packets, the transfer drum will be returned from the RWM carousel to the TRU RWM entry port. The PCS will send a CL message to the DMS with the transfer drum Package ID and a location TRU RWM entry port (TRURWENTRY). The packets will be removed and scanned for treatment. The PCS will send a non-compliant item present for treatment (NCIT) message to the DMS with the packet ID and a location TRU RWM treatment table (TRURWTREAT). As the packets are collected into a treatment container, the PCS will send a treatment container and item container (TCIC) relationship message to the DMS with the treatment container ID, item container ID and a location TRU RWM treatment table (TRURWTREAT).

The corresponding samples will also be brought in by connecting the purge port to the TRU RWM glovebox. The PCS will send the DMS a CL message when the purge port is scanned at the TRU RWM purge port with the purge port ID and a location TRU RWM purge port (TRURW_PP). As the samples are removed and scanned, the PCS will send the DMS a samples present for treatment (TRSP) message with the sample ID and a location TRU RWM treatment table (TRURWTREAT). If they are also going into a treatment container, then the PCS will send the DMS a treatment container and item container (TCIC) relationship message with the treatment container ID, item container ID and a location TRU RWM treatment table (TRURWTREAT).

When the treatment container is first scanned into the TRU RWM glovebox, the PCS will send the DMS a treatment container and loadout drum (TCIC) relationship message with the treatment container ID, loadout drum ID and a location TRU RWM exit port (TRURWEXIT). It will be sent to the Process area airlock to go to the NDE/NDA area. The PCS will send a CL message to the DMS when it arrives on the airlock B1 with the drum Package ID and a location airlock B1 (AIRCVR_B1). Under abnormal circumstance, the drum will go to the A3 airlock which normally feeds drums to the Process area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock A3 (AIRCVR_A3).

When the compliant loadout drum is full, it will be sent to the Process area airlock to go to the NDE/NDA area. The PCS will send a CL message to the DMS when it arrives on the airlock B1 with the drum Package ID and a location airlock B1 (AIRCVR_B1). Under abnormal circumstance, the drum will go to the A3 airlock which normally feeds drums to the Process area. The PCS will send

a CL message to the DMS with the drum Package ID and a location airlock A3 (AIRCVYR_A3).

When the transfer drum is empty, it can go back to the TRU Process glovebox to be used again or go to the RWM carousel for temporary storage.

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

E.2.3.6 Empty 85g Entry/Exit Drums (Figure G)

The empty 85-gallon drums used as overpacks from the LLW entry port and the TRU entry port can be moved to the LLW exit port or LLW RWM exit port to collect compliant waste. Typically contaminated drums would be used for this function, but non-contaminated drums will also be used depending on the number of drums available. Selected spare drums will be stored on the RWM carousel. The PCS will send a CL message to the DMS when the drum arrives at any of the above locations with the Empty 85-gallon drum Package ID and a location LLW Exit port (LLW_EXIT), LLW RWM Exit port (LLWRWEXIT), or RWM carousel (RWM_CRSL).

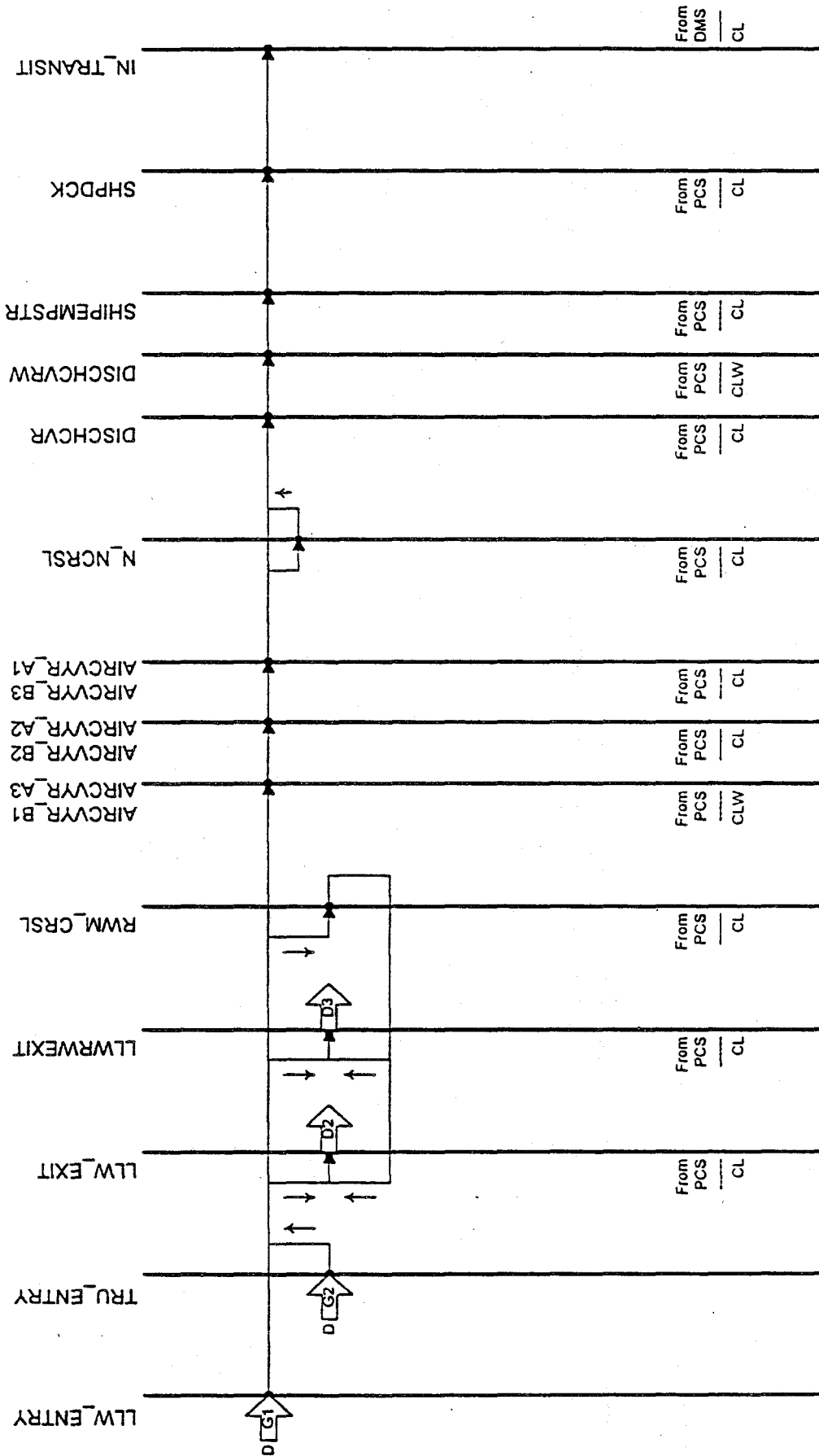
If the empty 85-gallon drums are not contaminated, then they can be shipped out of the facility to be used again as overpacks. The AGV will deliver the drums to the Process area airlock to go to the NDE/NDA area. The PCS will send a CLW message to the DMS when it arrives on the airlock B1 with the drum Package ID, drum weight and a location airlock B1 (AIRCVYR B1). As it moves through to the B2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B2 (AIRCVYR B2). It will then move through to the B3 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVYR_B3).

Under abnormal circumstances, the drum will go to the A3 airlock which normally feeds drums to the Process area. The PCS will send a CLW message to the DMS with the drum Package ID, drum weight and a location airlock A3 (AIRCVYR_A3). As it moves through to the A2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A2 (AIRCVYR_A2). It will then move through to the A1 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A1 (AIRCVYR_A1).

When the drum reaches the NDE/NDA area, the drum may be held temporarily at the NDE/NDA carousel where the PCS will send the DMS a CL message with the drum Package ID and a location NDE/NDA carousel (N_NCRSL). Or it can be delivered to the discharge conveyor in the Shipping/Receiving area. When it reaches the discharge conveyor, the PCS will send a CL message to the DMS with the drum Package ID and a location discharge conveyor (DISCHCVR). When it reaches the end of the discharge conveyor, the PCS will send a CLW message to the DMS with the drum Package ID, drum weight and a location discharge conveyor scales (DISCHCVRW).

The drum will then be moved to the storage area for excess 85-gallon drums. The drum's barcode will be scanned at that location and the PCS will send the DMS a CL message with the drum Package ID and a location excess 85-gallon storage area (SHIPEMPSTR). When a set of empty drums are to be shipped, they will be moved to the shipping dock and their barcodes scanned.

WRAP 1 DMS LOCATION TRACKING - EMPTY 85G ENTRY/EXIT DRUMS



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The PCS will then send the DMS a CL message with all of the drum Package IDs to be shipped and a location shipping dock (SHPDCK). After the drums are loaded on a transport and the transport moves out, the DMS will send the PCS a CL message with the drum Package IDs in the shipment and a location "In-transit" (IN_TRANSIT).

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

E.2.3.7 Empty One-Trip Drums and Empty 55g Entry/Exit Drums (Figure H)

A shipment of empty one-trip drums will be received at the Receiving dock and the barcodes will be scanned. The PCS will send a CL message to the DMS with the drum Package IDs and a location receiving dock (RECDCK). After the paper work has been checked, the DMS will send a CL message to the PCS with the drum Package IDs and a location receiving dock (RECDCK). The drums will then be moved to the empty drum storage area where the barcodes will be scanned and the PCS will send a CL message to the DMS with the drum Package IDs and a location empty drum storage (EMPSTR).

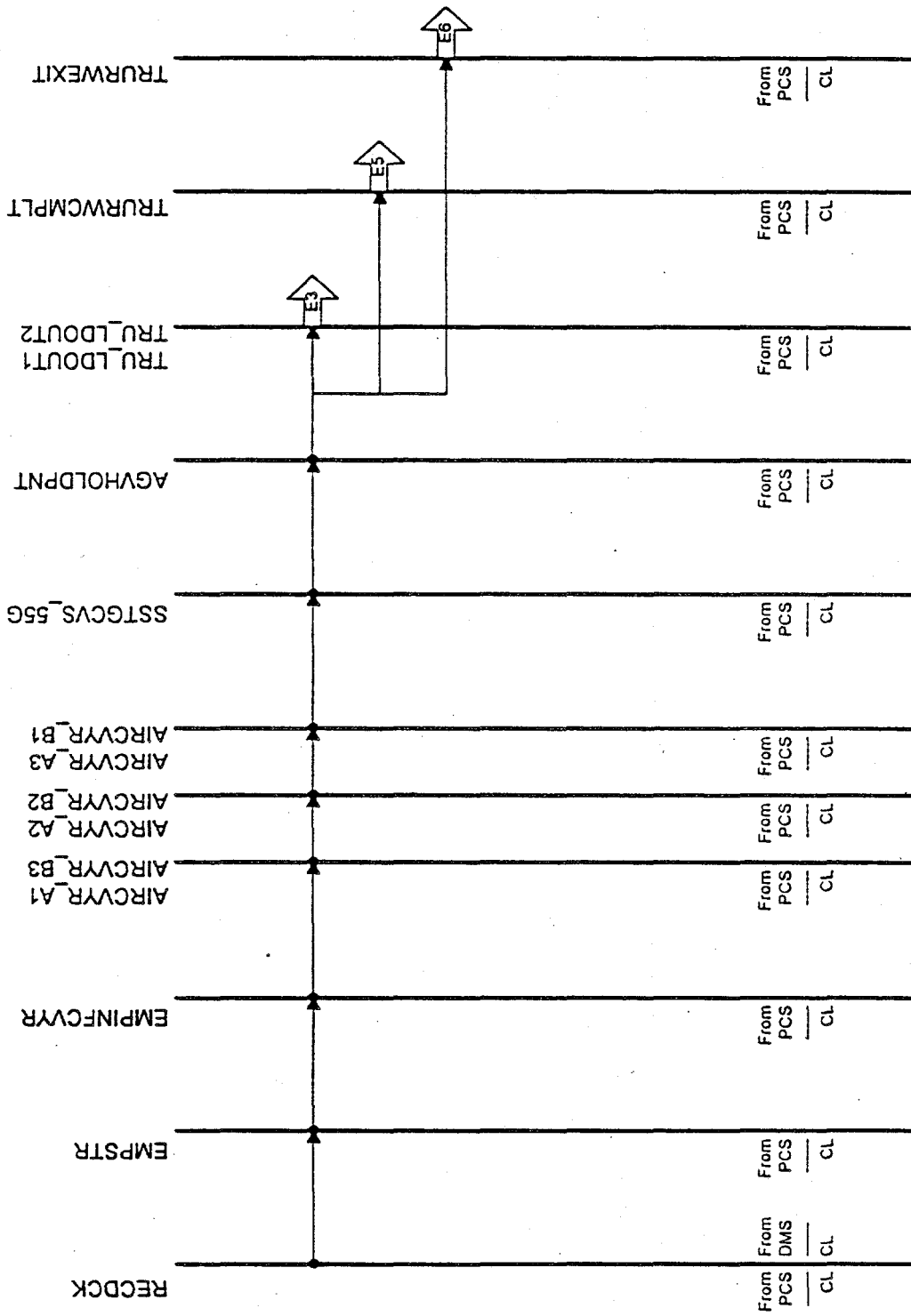
When the drums are needed, they will be moved to the empty drum infeed conveyor where their barcodes will be scanned and the PCS will send a CL message to the DMS with the drum Package ID and a location empty drum infeed conveyor (EMPINFCVYR). The drum will then be picked up by an AGV and moved through the NDE/NDA area to the airlock to the Process area. The PCS will send a CL message to the DMS when it arrives on the airlock A1 with the drum Package ID and a location airlock A1 (AIRCVR_A1). As it moves through to the A2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A2 (AIRCVR_A2). It will then move through to the A3 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A3 (AIRCVR_A3).

Under abnormal circumstances, the drum will go to the B3 airlock which normally feeds drums to the NDE/NDA area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVR_B3). As it moves through to the B2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B2 (AIRCVR_B2). It will then move through to the B1 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B1 (AIRCVR_B1).

An AGV will then pick it up and take it to the 55-gallon one trip drum staging conveyor. The PCS will then send a CL message to the DMS with the drum Package ID and a location 55-gallon one trip staging conveyor (STGCVR_55G). When a drum is needed at one of the gloveboxes, an AGV will pick it up and deliver it to one of the four glovebox ports at the TRU line. The PCS will send the DMS a CL message with the drum Package ID and a location TRU loadout port #1 (TRU_LDOUT1), TRU loadout port #2 (TRU_LDOUT2), TRU RWM compliant loadout port (TRURWCMLPT), or TRU RWM exit port (TRURWEXIT).

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

WRAP 1 DMS LOCATION TRACKING - EMPTY ONE-TRIP DRUMS



E.2.3.8 Empty 85-Gallon D&S and Empty 55-Gallon Entry/Exit Drums (Figure I)

Figure I depicts location tracking for both empty 85-gallon Drath and Shrader (D&S) drums and empty 55-gallon entry/exit drums. Tracking for each of these drum types is described in the following sections.

E.2.3.8.1 Empty 85-Gallon D&S Drums. A shipment of empty 85-gallon Drath and Shrader drums will be received at the Receiving dock and the barcodes will be scanned. The PCS will send a CL message to the DMS with the drum Package IDs and a location receiving dock (RECDCK). After the paper work has been checked, the DMS will send a CL message to the PCS with the drum Package IDs and a location receiving dock (RECDCK). The drums will then be moved to the empty drum storage area where the barcodes will be scanned and the PCS will send a CL message to the DMS with the drum Package IDs and a location empty drum storage (EMPSTR).

When the drums are needed, they will be moved to the empty drum infeed conveyor where their barcodes will be scanned and the PCS will send a CL message to the DMS with the drum Package ID and a location empty drum infeed conveyor (EMPINFCVYR). The drum will then be picked up by an AGV and moved through the NDE/NDA area to the airlock to the Process area. The PCS will send a CL message to the DMS when it arrives on the airlock A1 with the drum Package ID and a location airlock A1 (AIRCVR_A1). As it moves through to the A2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A2 (AIRCVR_A2). It will then move through to the A3 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A3 (AIRCVR_A3).

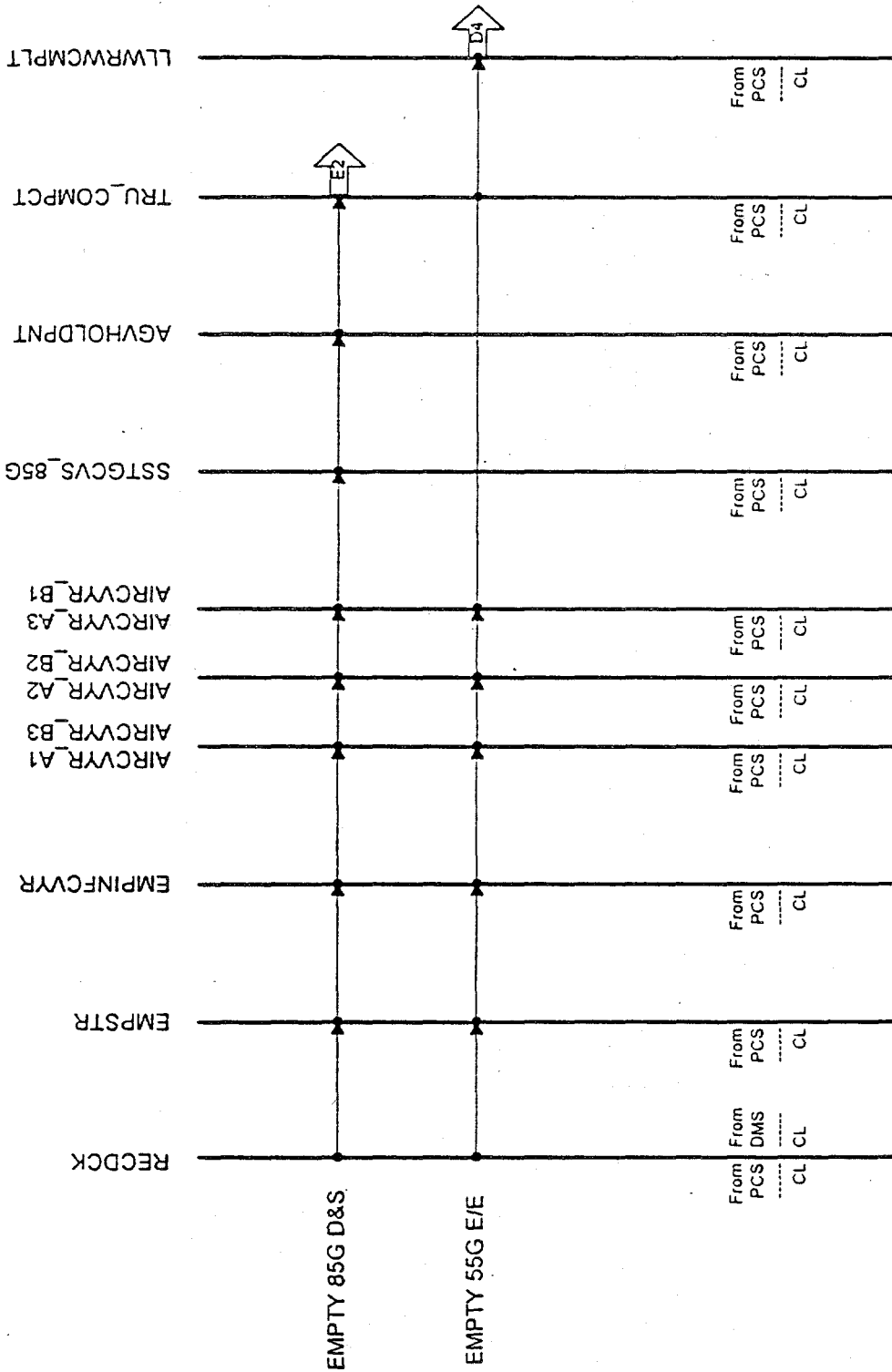
Under abnormal circumstance, the drum will go to the B3 airlock which normally feeds drums to the NDE/NDA area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVR_B3). As it moves through to the B2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B2 (AIRCVR_B2). It will then move through to the B1 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B1 (AIRCVR_B1).

An AGV will then pick it up and take it to the 85 Gal D&S drum staging conveyor. The PCS will then send a CL message to the DMS with the drum Package ID and a location 55 Gal one trip staging conveyor (STGCVR_85G). When a drum is needed at the TRU Process glovebox, an AGV will pick it up and deliver it to the TRU compact port. The PCS will send the DMS a CL message with the drum Package ID and a location TRU compact port (TRU_COMPCT).

E.2.3.8.2 Empty 55-Gallon E/E Drums. A shipment of empty 55 Gal E/E drums will be received at the Receiving dock and the barcodes will be scanned. The PCS will send a CL message to the DMS with the drum Package IDs and a location receiving dock (RECDCK). After the paper work has been checked, the DMS will send a CL message to the PCS with the drum Package IDs and a location receiving dock (RECDCK). The drums will then be moved to the empty drum storage area where the barcodes will be scanned and the PCS will send a CL message to the DMS with the drum Package IDs and a location empty drum storage (EMPSTR).

When the drums are needed, they will be moved to the empty drum infeed conveyor where their barcodes will be scanned and the PCS will send a CL

WRAP 1 DMS LOCATION TRACKING EMPTY 85G D&S AND EMPTY 55G E/E DRUMS



message to the DMS with the drum Package ID and a location empty drum infeed conveyor (EMPINFCVYR). The drum will then be picked up by an AGV and moved through the NDE/NDA area to the airlock to the Process area. The PCS will send a CL message to the DMS when it arrives on the airlock A1 with the drum Package ID and a location airlock A1 (AIRCVR_A1). As it moves through to the A2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A2 (AIRCVR_A2). It will then move through to the A3 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock A3 (AIRCVR_A3).

Under abnormal circumstance, the drum will go to the B3 airlock which normally feeds drums to the NDE/NDA area. The PCS will send a CL message to the DMS with the drum Package ID and a location airlock B3 (AIRCVR_B3). As it moves through to the B2 airlock, the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B2 (AIRCVR_B2). It will then move through to the B1 airlock where the PCS will send a CL message to the DMS with the drum Package ID and a location airlock B1 (AIRCVR_B1).

An AGV will then pick it up and take it directly to the LLW RWM compliant loadout port. The PCS will then send a CL message to the DMS with the drum Package ID and a location LLW RWM compliant loadout port (LLWRWCMPLT).

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

E.2.3.9 Background and Verification Drums (Figure J)

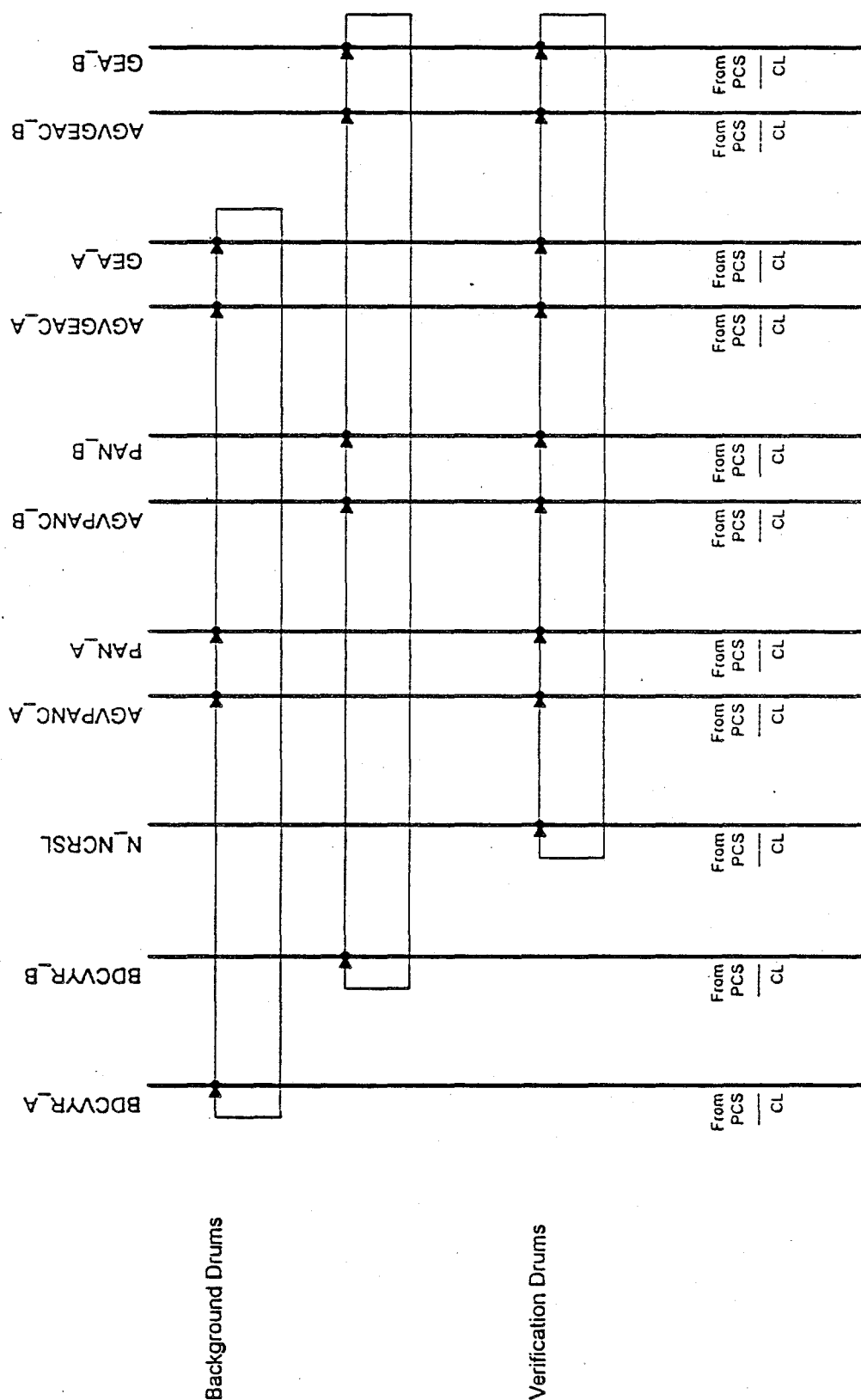
There are two background drums and two verification drums used to calibrate the NDA equipment (PANs and GEAs). One background drum is staged on its background drum storage conveyor and is routed to the PAN A and GEA A at the beginning and end of the shift. The PCS will send a CL message to the DMS with the background drum Package ID and the following sequence of locations AGV PAN A (AGVPANC_A), PAN A (PAN_A), AGV GEA A (AGVGEAC_A), or GEA A (GEA_A). When the background drum is returned to its storage conveyor, the PCS sends a CL message to the DMS with the background drum Package ID and a location background storage conveyor (BDCVYR_A).

The other background drum is staged on its background drum storage conveyor and is routed to the PAN B and GEA B at the beginning and end of the shift. The PCS will send a CL message to the DMS with the background drum Package ID and the following sequence of locations AGV PAN B (AGVPANC_B), PAN B (PAN_B), AGV GEA B (AGVGEAC_B), or GEA B (GEA_B). When the background drum is returned to its storage conveyor, the PCS sends a CL message to the DMS with the background drum Package ID and a location background storage conveyor (BDCVYR_B).

There are two verification drums stored in the NDE/NDA carousel. One is identified verification high and the other verification low. Each drum will go through both PAN and GEA vaults. As each verification drum visits each of the PAN and GEA vaults in turn, the PCS will send CL messages to the DMS with the Verification drum Package ID and one of the following locations:

- AGV PAN A location (AGVPANC_A)
 - PAN A vault (PAN_A)

WRAP 1 DMS LOCATION TRACKING - BACKGROUND & VERIFICATION DRUMS



- AGV PAN B location (AGVPANC_B)
 - PAN B vault (PAN_B)
- AGV GEA A location (AGVGEAC_A)
 - GEA A vault (GEA_A)
- AGV GEA B location (AGVGEAC_B)
 - GEA B vault (GEA_B)

At the end of the tour through all of the NDA vaults, the verification drums are returned to the NDE/NDA carousel with the PCS sending a CL message to the DMS with the verification drum Package ID and a location NDE/NDA carousel (N_NCRSL).

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

E.2.3.10 Samples, Purge Ports, and Pigs (Figure K)

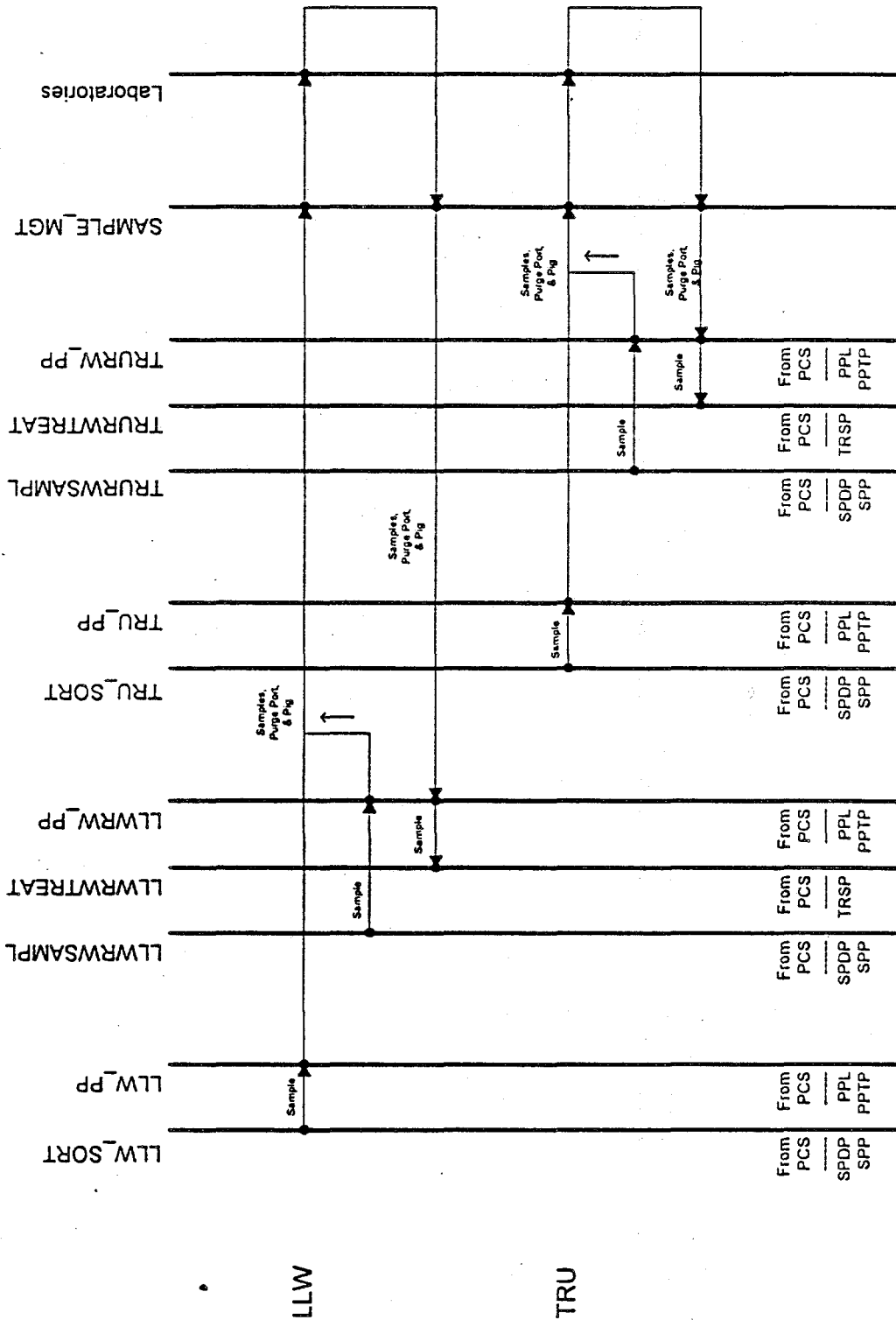
The waste drum at the LLW Process glovebox will be dumped onto the sort table where it will be sampled. As samples are taken, they will be scanned by a barcode scanner and the PCS will send two types of relationship messages to the DMS. The first is a sample to parent drum relationship (SPDP) message with the sample ID, parent drum Package ID and a location LLW Sort glovebox (LLW_SORT). The second is the sample to purge port relationship (SPP) message with the sample ID, the Purge Port ID and a location LLW Purge Port (LLW_PP). When the Purge Port is full, it is disconnected from the glovebox and the Purge Port barcode and associated Transfer Pig barcode are scanned and the PCS will send a Purge Port to Transfer Pig (PPTP) relationship message to the DMS with the Purge Port ID, Transfer Pig ID and a location LLW purge port (LLW_PP).

The non-compliant items at the LLW RWM glovebox are sampled and as the samples are taken, the PCS send a Sample and Parent Drum/Packet (SPDP) relationship message to the DMS with the sample ID, packet ID and a location LLW RWM sort table (LLWRWSAMPL). The PCS will also send a sample to purge port (SPP) relationship message to the DMS with the sample ID, purge port ID and a location LLW RWM purge port (LLWRW_PP). When the Purge Port is full, it is disconnected from the glovebox and the Purge Port barcode and associated Transfer Pig barcode are scanned and the PCS will send a Purge Port to Transfer Pig (PPTP) relationship message to the DMS with the Purge Port ID, Transfer Pig ID and a location LLW RWM purge port (LLWRW_PP).

During the treatment process, the corresponding samples will also be brought in by connecting the purge port to the LLW RWM glovebox. The PCS will send the DMS a CL message when the purge port is scanned at the LLW RWM purge port with the purge port ID and a location LLW RWM purge port (LLWRW_PP). As the samples are removed and scanned, the PCS will send the DMS a samples present for treatment (TRSP) message with the sample ID and a location LLW RWM treatment table (LLWRWTREAT). If they are also going into a treatment container, then the PCS will send the DMS a treatment container and item container (TCIC) relationship message with the treatment container ID, item container ID and a location TRU RWM treatment table (LLWRWTREAT).

The waste on the sort table at the TRU Process glovebox will be sampled. As samples are taken, they will be scanned by a barcode scanner and the PCS will send two types of relationship messages to the DMS. The first is a

WRAP 1 DMS LOCATION TRACKING - SAMPLES, PURGE PORTS & PIGS



sample to parent drum relationship (SPDP) message with the sample ID, parent drum Package ID and a location TRU Sort glovebox (TRU_SORT). The second is the sample to purge port relationship (SPP) message with the sample ID, the Purge Port ID and a location TRU Purge Port (TRU_PP). When the Purge Port is full, it is disconnected from the glovebox and the Purge Port barcode and associated Transfer Pig barcode are scanned and the PCS will send a Purge Port to Transfer Pig (PPTP) relationship message to the DMS with the Purge Port ID, Transfer Pig ID and a location LLW RWM purge port (TRU_PP).

The non-compliant items are also sampled and as the samples are taken, the PCS send a Sample and Parent Drum/Packet (SPDP) relationship message to the DMS with the sample ID, packet ID and a location TRU RWM sort table (TRURWSAMPL). The PCS will also send a sample to purge port (SPP) relationship message to the DMS with the sample ID, purge port ID and a location TRU RWM purge port (TRURW_PP). When the Purge Port is full, it is disconnected from the glovebox and the Purge Port barcode and associated Transfer Pig barcode are scanned and the PCS will send a Purge Port to Transfer Pig (PPTP) relationship message to the DMS with the Purge Port ID, Transfer Pig ID and a location LLW RWM purge port (TRURW_PP).

During the treatment process, the corresponding samples will also be brought in by connecting the purge port to the TRU RWM glovebox. The PCS will send the DMS a CL message when the purge port is scanned at the TRU RWM purge port with the purge port ID and a location TRU RWM purge port (TRURW_PP). As the samples are removed and scanned, the PCS will send the DMS a samples present for treatment (TRSP) message with the sample ID and a location TRU RWM treatment table (TRURWTREAT). If they are also going into a treatment container, then the PCS will send the DMS a treatment container and item container (TCIC) relationship message with the treatment container ID, item container ID and a location TRU RWM treatment table (TRURWTREAT).

The Transfer Pigs are transported to the Sample Management area where they are scanned into the DMS with a location sample management (SAMPLE_MGT). The samples are then sent to the lab for analysis and returned with the results. They are again scanned into the DMS as they return with a location sample management (SAMPLE_MGT). As the treatment processes are run in each of the RWM gloveboxes, the Transfer Pigs/Purge Ports are sent to the gloveboxes so that the samples can be treated along with the non-compliant items.

- Process Model: To be identified in Rev. 1 of the *WRAP 1 DMS SDD*.

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APPENDIX F
PROCESS MODEL

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CONTENTS

3.1.1.2 RECEIVING DRUM OR BOX CONTAINERS F-2
 3.1.3 LLW PROCESS F-10
 3.1.6 PROCESS ROUTING AND PICKLISTS F-16
 3.1.7 FISSILE LOADING F-20
 3.1.8 WASTE INVENTORY BY LOCATION AND/OR CONTAINER RELATIONSHIPS F-22

FIGURES

E-1. PM-3.1.1.2 Receiving Drum or Box Containers. F-9
 E-2. PM-3.1.3.1 LLW Process Glovebox. F-15
 E-3. PM-3.1.6 Process Routing and Picklists. F-19
 E-4. PM-3.1.7 Radiologic Inventory for TRU and TRU RWM Gloveboxes. . . . F-21
 E-5. PM-3.1.8 Communications Message Model (Waste Inventory Tracking by
 Container Relationships). F-41

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F.0 DATAFLOW DIAGRAM/PROCESS MODEL DESCRIPTIONS

This appendix contains the Process Model. It is comprised of a columnar table describing the Unit Processes in the order in which they occur and a diagram depicting the Physical Unit Processes occurring in a module. The Process Model can also be considered a high-level Data Flow Diagram.

The following general assumptions have been made in this modelling process:

1. Updates to Data Stores will have pre-trigger database procedures that will validate the integrity of each attribute change (valid domain) and journal the records of Data Stores marked with an 'H' for history.
2. An initialization module has been added to the SDD to provide data recovery and integrity checking at startup following system failure or shutdown.

3.1.1.2 RECEIVING DRUM OR BOX CONTAINERS

	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
1	BAR CODE PACKAGE ID LABELS	DMSS1401 Report	COMPLETE TRANSFER OF SWITS SCREENS AND SCRIPTS				

UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
2 CONFIRM DRUMS OR BOXES ON SWITS	<p>DMSS0101 Active Buttons: -Confirm Package IDs -Exit -Commit (Save) User may ADD or DELETE (no MODIFY, must DELETE OLD and INSERT NEW) RECDISP_PKG_IDS</p> <p>DISPLAY Shipment Numbers for user selection; QUERY for Shipment Number (Multiple shipments may be on the Receiving Dock, incremental RECDISP_BLK_NUM)</p> <p>Container Error Status Line (must resolve to continue): 1. Package ID already exists in WRAP 2. Package ID non-existent in SWITS 3. Inner drum data incomplete 4. Outer drum data incomplete</p> <p>Container Error Status Line (for information only): 5. Package ID not on Process List</p> <p>System Status Line: 1. Confirmation Complete 2. Container Logged in PCS</p>	<p>- User selects "Confirm Package IDs" Calculate Facility Curie Inventory, repeat until all errors are cleared; when all errors are cleared, lock user out of all data entry; go to next Unit Process and deactivate "Confirm Package ID's" Button and activate "Request Certification Data Button".</p>	<p>User select Shipment Number User select "EXIT" save or delete RECDISP Data and exit selecting "Exit" User select "Confirm Package ID's" button Compare to Package IDs in SWITS; Select (S)CONREL, (S)WASTE, RECDISP, WASTE, PROCESS If RECDISP_PKG_ID = (S)CONR_TO_PKG_ID and (S)CONR_REL_CD = 'O', Update RECDISP_INNER_PKG_ID = (S)CONR_FROM_PKG_ID Else no Inner Package ID displayed HEADER: Column 1 - "Outer Package ID" RECDISP_PKG_ID Column 2 - "Inner Package ID" RECDISP_INNER_PKG_ID Column 3 - "Error Status" DISPLAY Package ID in 1st column from RECDISP selection If RECDISP_PKG_ID = CON_PKG_ID DISPLAY "Package ID already exists in WRAP" in 2nd column If RECDISP_PKG_ID < > (S)CON_PKG_ID DISPLAY "Package ID non-existent in SWITS" in 2nd column If PROCESS_PKG_ID < > RECDISP_PKG_ID then DISPLAY "Package ID not on Process List" in 2nd column End Validate all Required SWITS fields If data incomplete DISPLAY "Data incomplete for Outer Drum" DISPLAY "Data incomplete for Inner Drum" End If Error is resolved deactivate "CONFIRM PACKAGE IDS" activate "REQUEST CERTIFICATION DATA" End DISPLAY system status "CONFIRMATION COMPLETE"</p>	<p>(S)WASTE RECDISP CONREL WASTE PROCESS</p>	<p>(S)CON_PKG_ID = RECDISP_PKG_ID RECDISP_INNER_PKG_ID (S)CONR_REL_CD (S)CONR_TO_PKG_ID (S)CONR_FROM_PKG_ID CON_PKG_ID PROCESS_PKG_ID</p>	

UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
3	<p>DMSS1102 If Inventory exceeds limits DISPLAY Pop-Up Alarm Canvas with Active Button: OK End</p>	<p>IF RADTOT exceeds limits DISPLAY for RADMAT_AREA = "F" HEADER: Column 1: Header: Area RADMAT_DESCR Column 2: Header: Units RADMAT_UNITS Column 3: Header: Total RADMAT_TOT Column 4: Header: Limit RADMAT_LIMIT Column 5: Header: Alarm RADMAT_ALARM End User selects OK button to continue</p>	<p>CREATE local variables RADALARM, TOTTEMP TOTTEMP = RADMAT_RAD_TOTAL if RECDISP_INNER_PKG_ID = (SIRDET_PKG_ID Add (SIRDET_TOT_DE_CI to TOTTEMP Else if RECDISP_PKG_ID = (SIRDET_PKG_ID Add (SIRDET_TOT_DE_CI to TOTTEMP if TOTTEMP ≥ RADMAT_LIMIT then set RADALARM = 'Y' End DISPLAY pop-up Facility Limit canvas If User select "Request Certification Data" store variables to RADMAT RADMAT_RAD_TOTAL = TOTTEMP RADMAT_ALARM = RADALARM then pass parameters to DMSCOM for DMSPCS FCL message End</p>	<p>RADMAT MSGLOG</p>	<p>RADMAT_RAD_TOTAL RADMAT_ID RADMAT_DT RADMAT_ALARM MSG_GEN_TYPE = "DMSPCS" MSG_SPEC_TYPE = "FCL" MSG_STRING_1 = RADMAT_RAD_TOTAL MSG_STRING_2 = RADMAT_ALARM</p>	

UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
4 RETRIEVE DRUM OR BOX DATA FROM SWITS GENERATE DMS DRUM OR BOX CONTAINERS RECORDS (SEND PACKAGE IDS TO PCS)	DMSS0101 Active Buttons: -Request Certification Data -Exit User NOT allowed to MODIFY, ADD, or DELETE once "Request Certification Data" has been selected. Pop-Up Canvas for Signature Password	- User Select "Request Certification Data" User Input of Signature Password Update TSD_ACCEPT_DT CON_WRAP_STAT_C D Download Data when all SWITS data is retrieved deactivate "Request Certification Data"	User select "EXIT", exit screen User select "Request Certification Data" If variable password = URL_SIG_PSWD and URL_USER_ID = URL_USERID If (S)CON_LOCN <> 'WRAP1' Update (S)CON_LOCN = 'WRAP1' End If (S)TSD_ACCEPT_DT = Null then insert SYSTEM_DT in TSD_ACCEPT_DATE End CREATE CONLOC Records for each RECDISP_PKG_ID CREATE CERTIFICATION records and download SWITS data Select (S)CONREL If RECDISP_INNER_PKG_ID = (S)CONR_FROM_PKG_ID Create CONREL Copy to (S)CONREL to CONREL CREATE Cert. Records for (S)CONR_FROM_PKG_ID CREATE WASTE Record for (S)CONR_TO_PKG_ID ELSE CREATE Certification Records for all RECDISP_PKG_ID = (S)CON_PKG_ID End Select all CON_PKG_ID = RECDISP_PKG_ID Update CONEXT_WRAP_STAT_CD to "W"	(S)WASTE USERROLE CONLOC WASTEXT	(S)CON_LOCN_ID = 'WRAP1' (S)TSD_ACCEPT_DT URL_SIG_PSWD CONLOC_PKG_ID = RECDISP_PKG_ID CONLOC_DT = SYSTEM_DT CONLOC_LOCN_ID = 'RECDCK' CONEXT_WRAP_STAT_CD	

UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
8				RADDETAIL (0,1)	RDET_PKG_ID = (SIRDET_PKG_ID) RDET_BG_DOSE_RATE = (SIRDET_BG_DOSE_RATE) RDET_NEUT_DOSE_RATE = (SIRDET_NEUT_D OSE_RATE) RDET_ORGANIC_VOL_PCT = (SIRDET_ORGANIC_VOL_PCT) RDET_SWIMS_CD = (SIRDET_SWIMS_CD) RDET_SWTYP_CD = (SIRDET_SWTYP_CD) RDET_SWTYP_GROUP = (SIRDET_SWTYP_GROUP) RDET_THERMAL_POWER = (SIRDET_THERMA L_POWER) RDET_TOT_ALPHA_CI = (SIRDET_TOT_ALPHA_CI) RDET_TOT_BG_CI = (SIRDET_TOT_BG_CI) RDET_TOT_PE_CI = (SIRDET_TOT_PE_CI) RDET_TOT_PU_FGE = (SIRDET_TOT_PU_FGE) RDET_VOID_CD = (SIRDET_VOID_CD) RDET_WASTE_CAT = (SIRDET_WASTE_CAT) RDET_WASTE_MAKEUP = (SIRDET_WASTE_MAKEUP) RDET_WRAP_CAT = (SIRDET_WRAP_CAT) RDET_TOT_DE_CI = (SIRDET_TOT_DE_CI)	R
9				HAZDETAIL (0,1)	HDET_PKG_ID = (SIHDET_PKG_ID) HDET_DESIG_CD = (SIHDET_DESIG_CD) HDET_DW_NUM = (SIHDET_DW_NUM) HDET_FLASHPOINT = (SIHDET_FLASHPOINT) HDET_HAZPROP_CD = (SIHDET_HAZPROP_CD) HDET_LANDBAN = (SIHDET_LANDBAN) HDET_OTHER_LANDBAN_1 = (SIHDET_OTHER_LANDBAN_1) HDET_OTHER_LANDBAN_2 = (SIHDET_OTHER_LANDBAN_2) HDET_OTHER_LANDBAN_3 = (SIHDET_OTHER_LANDBAN_3) HDET_PCB_DESCR = (SIHDET_PCB_DESCR) HDET_PCB_PPM = (SIHDET_PCB_PPM) HDET_PCB_SUBTYPE = (SIHDET_PCB_SUBTYPE) HDET_PCB_TYPE = (SIHDET_PCB_TYPE) HDET_PCB_WGT = (SIHDET_PCB_WGT) HDET_PH = (SIHDET_PH) HDET_REMOVED_DT = (SIHDET_REMOVED_DT) HDET_SCAT_CD = (SIHDET_SCAT_CD) HDET_WASTE_VOL = (SIHDET_WASTE_VOL)	R

	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
10					CHEMCOMP (0,m)	HAZ_PKG_ID = (SIHAZ_PKG_ID HAZ_COMP_ID = (SIHAZ_COMP_ID HAZ_COMP_PPM = (SIHAZ_COMP_PPM HAZ_COMP_TEXT = (SIHAZ_COMP_TEXT HAZ_COMP_WGT = (SIHAZ_COMP_WGT HAZ_COMP_WGT_PCT = (SIHAZ_COMP_WGT_PCT HAZ_COMP_EPCRA_FLAG = (SIHAZ_COMP_EPCRA_FLAG	
11					ISOQTY (0,m)	RAD_PKG_ID = (SIRAD_PKG_ID RAD_ALPHA_CI = (SIRAD_ALPHA_CI RAD_ISO_NUM = (SIRAD_ISO_NUM RAD_PE_CI = (SIRAD_PE_CI RAD_PU_FGE = (SIRAD_PU_FGE RAD_QTY = (SIRAD_QTY RAD_UNKNOWN = (SIRAD_UNKNOWN	R R
12					APPMSDS (0,1)	APP_PKG_ID = (SIAPP_PKG_ID APP_MSDS = (SIAPP_MSDS	
13		DMSCOM only		Pass Parameters to DMSCOM for DMSPCS CL with all RECDISP_PKG_ID DISPLAY STATUS "CONTAINERS LOGGED INTO PCS" History and Delete RECDISP	RECDISP (1,1)		

DATA FLOW DIAGRAM/PROCESS MODEL

3.1.1.2 Receiving Drum or Box Containers

LEGEND	
→	= Dataflow
○	= Unit Process
▭	= Data Store

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03-14-95

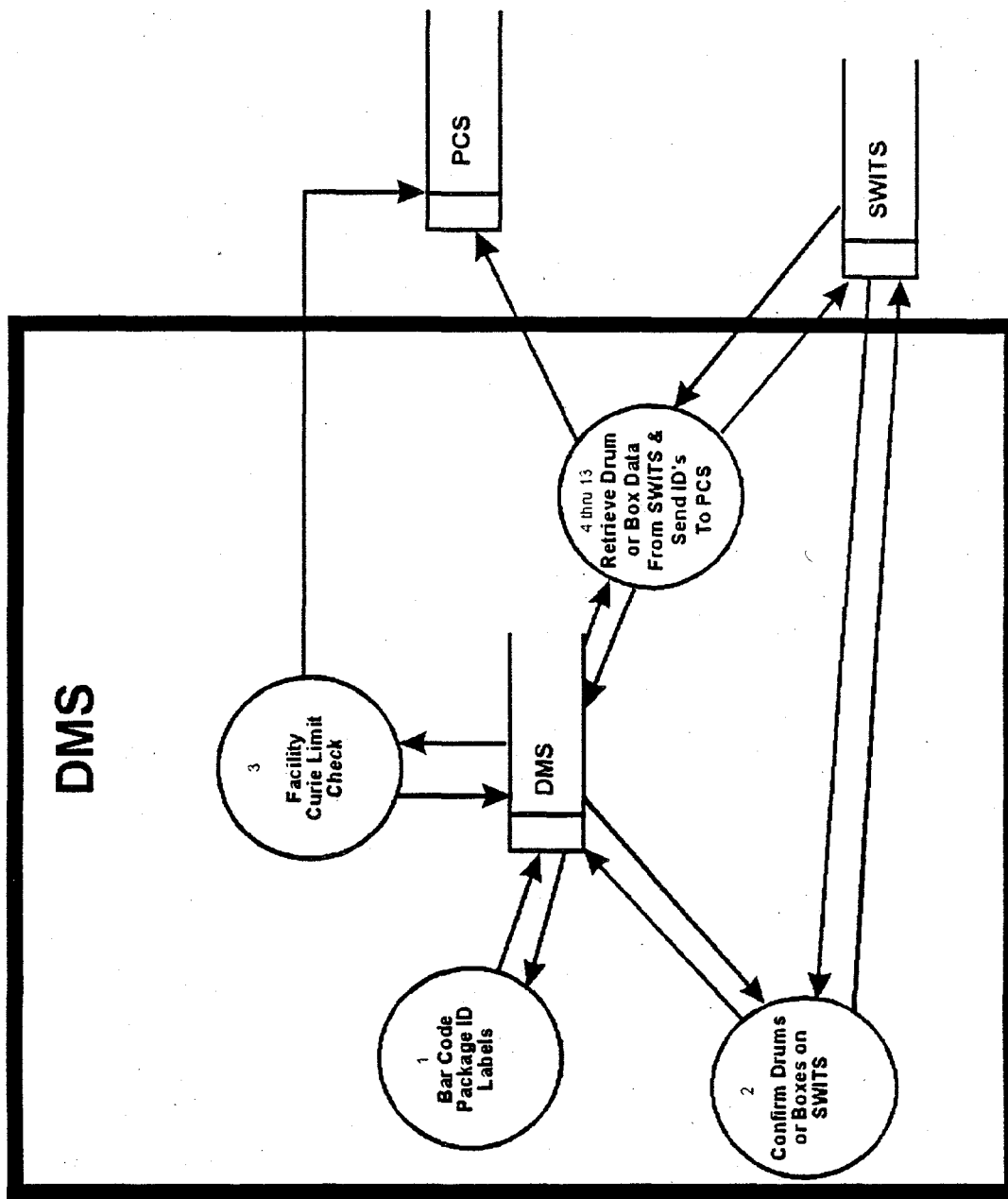


Figure F-1. PM-3.1.1.2 Receiving Box or Drum Containers.

3.1.3 LLW PROCESS

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
1	LLW GLOVEBOX DRUM STATUS AT ENTRY	DMSS0311 Active Buttons: - OK	Header/DISPLAY: Line 1 - Package-ID CON_PKG_ID - User select 'OK' Exit	Select newest CONLOC_LOCN_ID record where CONLOC_LOCN_ID = "LLW_ENTRY" and CON_PKG_STATUS < > "U" IF record not found Display message "No drum located at LLW Entry Lift Table" (OK then exit) ELSE IF CONEXT_COMPLIANT_FLAG = "N" or CON_SAMPLE_FLAG = "Y", THEN Display message "SORTING REQUIRED" ELSE Display message "SORTING NOT REQUIRED" ENDIF ENDIF		

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
3	LLW NON-COMPLIANT PACKET	DMSS0313 Active Buttons: - SAMPLE - LLW SORTING TABLE - EXIT	Header/DISPLAY Line 1 - Package ID CON_PKG_ID (for parent drum for CONLOC = "LLW_SORT" CON_PKG_ID (for transfer drum where CONLOC = "LLW_RWMPRT" CONEXT_CNTR_STATUS (user modify default) Column 1 - Packet ID PACKET_ID (Bar Code) PCSDMS RWPP Column 2 - Waste Description CON_GENER_WASTE_DESCR (Waste description is for each packet, allow user modification) Column 3 - Packet Material Group Code MAT_GRP_CD (user entry - look up to MATL) -User select 'SAMPLE' LLW TBD -User select 'LLW SORTING TABLE' GOTO LLW Sort Table	(Relationships are created from PCSDMS RWPP)	WASTE WASTEXT MATPACK	CON_GENER_WASTE_DESCR = user input CONEXT_CNTR_STATUS = user input MAT_GRP_CD = user input
4	LLW Sorting Glovebox Sample Processing	TBD DURING SM DEVELOPMENT?? Out of Scope for this release	Receive PCSDMS SPDP Message			

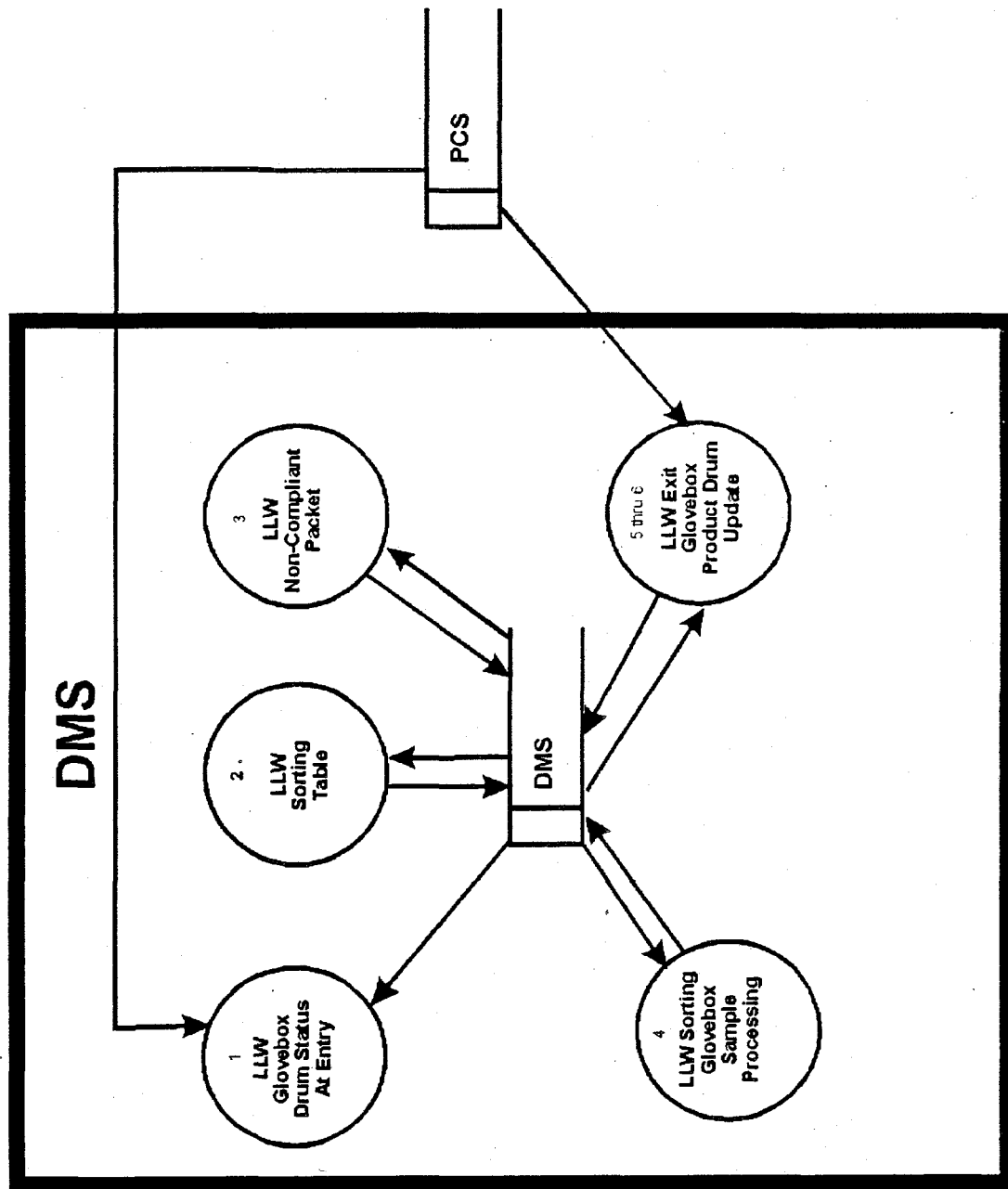
SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
5	LLW Exit Glovebox Product Drum Update	DMSS0315 Active Buttons: - SUM WASTE RECORDS - EXIT	Header/DISPLAY Select WASTE where CONLOC_PKG_ID = CON_PKG_ID and CONLOC_ID = LLW_EXIT and CONREL where CON_PKG_ID = CONR_TO_PKG_ID Left of screen Line 1 - Loadout Drum CON_PKG_ID (display only) Line 2 - Waste Description CON_GENER_WASTE_DESCR (User modify) Line 3 - Estimated Gross Weight CON_TARE_WGT + CONEXT_WGT (for each puck PCSDMS POPD message) Need form timer here Line 4 - Estimated Gross Height (Sum all CONEXT_HEIGHT for each PUCK) Line 5 - Beta-Gamma Dose Rate RDET_BG_DOSE_RT (user entry) Line 6 - Container QC Seal # RDET_SEAL_NUM (user entry) Line 7 - Filler Material Type RDET_VOID_CD (user entry) Lookup Table CODECHECK/VOID Right of screen For 1-6 records Display each puck Line 1 - Puck ID CON_PKG_ID Line 2 - Original Container ID CON_SEC_PKG_ID Line 3 - Puck Height CONEXT_HEIGHT (User modify) Line 4 - Puck Weight	Select WASTE where CONLOC_PKG_ID = CON_PKG_ID and CONLOC_ID = LLW_EXIT and CONREL where CON_PKG_ID = CONR_TO_PKG_ID Select all CONR_FROM_PKG_ID Count number of CONR_FROM_PKG_ID (Find out number of Pucks) Combine waste records for RAZDETAIL, HAZDETAIL, CHEMCOMP, and ISOQTY in accordance with SWITS algorithms <u>WEIGHT</u> Create Loadout PHYSCOMP (e.g. metal) SUM and combine like PHYSCOMPS and SUM to loadout PHYSCOMPS (newly-created records, except for loadout metal PHYSCOMP which is modified to include the metal of the puck drum) SUM pucks' CON_TARE_WGT and PHYS_COMP_WGT (metal), STORE into PHYS_COMP_WGT (metal) for loadout drum <u>HEIGHT</u> Sum for all PUCKS in loadout drum. CONEXT_HEIGHT	WASTE RAZDETAIL HAZDETAIL CHEMCOMP ISOQTY WASTEXT PHYSCOMP	CON_GENER_WASTE_DESCR RDET_BG_DOSE_RATE RDET_SEAL_NUM RDET_VOID_CD TBD TBD TBD CONEXT_HEIGHT PHYS_COMP_WGT

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
6	cont.	cont.	cont.	<p><u>VOLUME PERCENT</u> For each puck, calculate 100 times the compacted height of each PHYSCOMP (excluding metal drum) MULTIPLY PHYS_COMP_VOL_PCT times (CONEXT_HEIGHT * DEFAULT_PCK_MTL_HGT) for each PHYSCOMP STORE to array PHYSCOMP_PUCK</p> <p>Calculate 100 times the total compacted height for each PHYSCOMP (excluding metal drum) in the product drum (85-gallon) SUM for each like PHYSCOMP_DESCR the PHYSCOMP_PUCKs (just calculated) STORE to array PHYSCOMP_VAR</p> <p>Calculate 100 times the total compacted height for metal drum PHYSCOMP in the product drum (85-gallon) MULTIPLY 100 * Number of pucks * DEFAULT_PCK_MTL_HGT) and ADD to PHYSCOMP_VAR (metal)</p> <p>Calculate the final height of all pucks in product drum SUM CONEXT_HEIGHTs for each puck. STORE to variable PHYSCOMP_HGT</p> <p>DIVIDE PHYSCOMP_VAR by PHYSCOMP_HGT for each PHYSCOMP_DESCR and STORE to product drum PHYS_COMP_VOL_PCT</p>	PHYSCOMP	PHYS_COMP_VOL_PCT

DATA FLOW DIAGRAM/PROCESS MODEL

3.1.3.1 LLW-Process Glovebox

LEGEND	
→	Dataflow
○	Unit Process
□	Data Store



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03-14-95

Figure F-2. PM-3.1.3 LLW Process Glovebox.

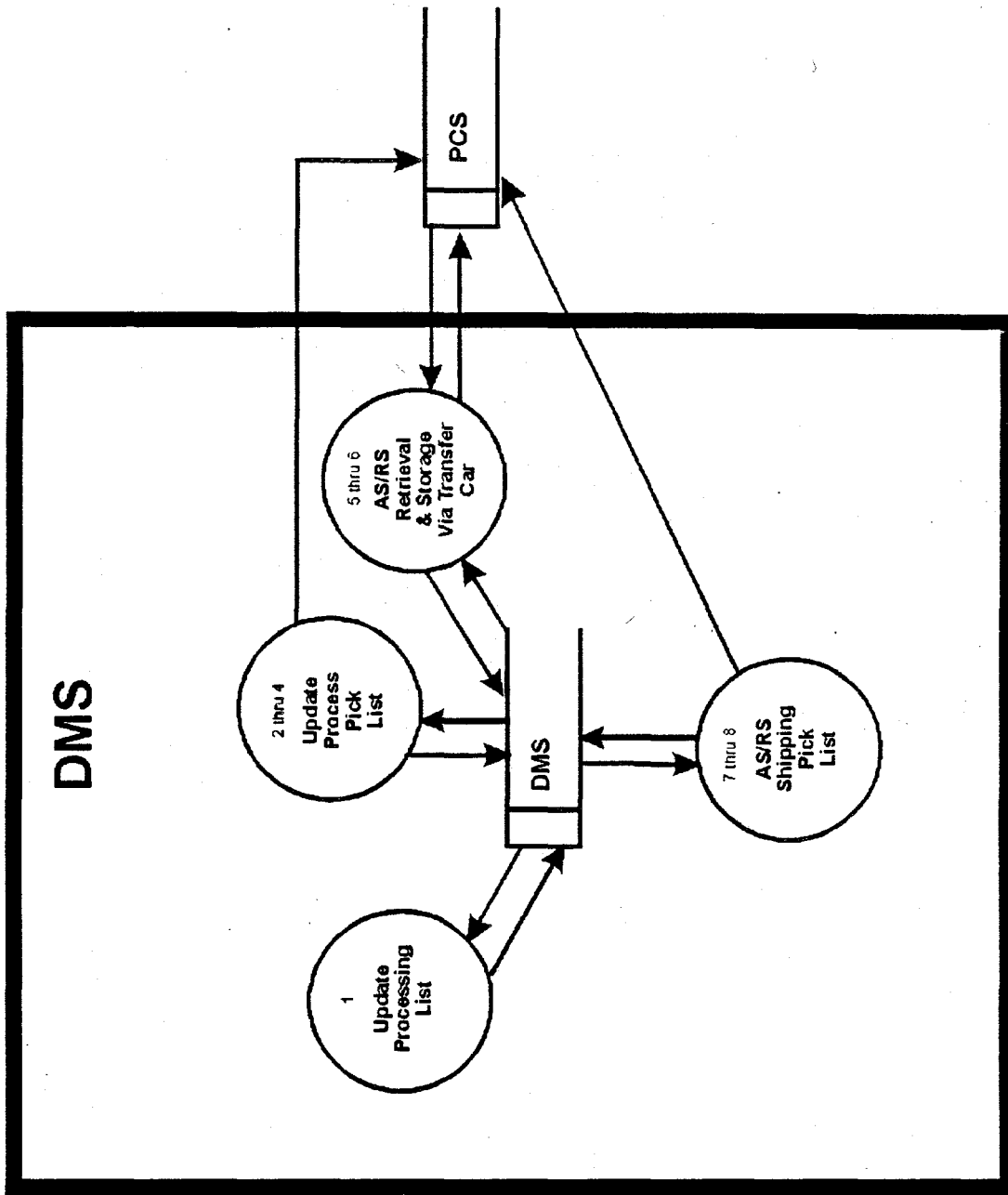
UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
4	<p>DMSS0902</p> <p>DMSS0901</p> <p>DMSS0902</p> <p>Active Buttons:</p> <ul style="list-style-type: none"> -Send to PCS -EXIT 	<p>User select 'Send to PCS' . send list to PCS</p>	<p>User select 'Send to PCS'</p> <p>Select PROCLIST, CONLOC</p> <p>IF PROC_PKG_ID = CONLOC_PKG_ID and</p> <p>IF CONLOC_LOCN_ID = AS_RS</p> <p>Send all PROC_PCS_FLAG = null</p> <p>For query PROC_PKG_ID</p> <p>Pass parameters to DMSCOM for DMSPCS PPL message</p>			
5	<p>AS/RS</p> <p>RETRIEVAL & STORAGE VIA TRANSFER CAR</p> <p>DMSS0903</p> <p>Active Buttons:</p> <ul style="list-style-type: none"> - Retrieve Bin Selection - Exit 	<p>User select 'Retrieves Bin Selection'</p>	<p>DISPLAY AS/RS Storage Bin Pchlist on left side of screen</p> <p>Header/DISPLAY:</p> <p>Select BIN, WASTE, RADETAIL</p> <p>where BIN_CONTENT_NUM < 4</p> <p>Sort by WASTE type get with customer, maybe ADHOC query?</p> <p>Column 1 - Bin Number</p> <p>BIN_NUM</p> <p>Column 2 - Package ID</p> <p>List all (1,3)</p> <p>Column 3 - Primary Waste Type</p> <p>CON_PKG_ID</p> <p>CON_PWTYP_CD</p> <p>Column 4 - Secondary Waste Type Group</p> <p>(Where BIN_PKG_ID's 1 thru 3 =</p> <p>RDET_PKG_ID)</p> <p>RDET_SWTYP_GROUP</p> <p>Column 5 - LLW Category</p> <p>RDET_WASTE_CAT</p> <p>Column 6 - Storage Category Code</p> <p>(Where BIN_PKG_ID's 1 thru 3 =</p> <p>RDET_PKG_ID)</p> <p>HDEI_SCAT_CD</p>	N/A		
6			<p>On right side of screen</p> <p>DISPLAY Discharge Conveyor Information</p> <p>Select DISCHARGE, WASTE, RADETAIL</p> <p>Header/DISPLAY:</p> <p>Column 1 - Package ID</p> <p>DISCHARGE_PKG_ID</p> <p>Column 2 - Primary Waste Type</p> <p>(Where DISCHARGE_PKG_ID = CON_PKG_ID)</p> <p>CON_PWTYP_CD</p> <p>Column 3 - Secondary Waste Type Group</p> <p>(Where DISCHARGE_PKG_ID = RDET_PKG_ID)</p> <p>RDET_SWTYP_GROUP</p> <p>Column 4 - LLW Category</p> <p>RDET_WASTE_TYPE</p> <p>Column 5 - Storage Category</p> <p>CON_SCAT_CD</p> <p>User selects Package ID to send to the PCS. Pass parameters to DMSCOM for DMSPCS TCPL with user selection of "Retrieve Bin Selection"</p>	N/A		

UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE	REQUIRED?
<p>7</p> <p>AS/RS SHIPPING PICK LIST</p>	<p>DMS0904</p> <p>Active Buttons:</p> <ul style="list-style-type: none"> - Commit Shipment Pick List - Signature Password - Send Shipment Pick List - Signature Password - Exit <p>Pop-Up screen for Shipment Number Lookup Table</p>	<p>Display Shipping List to PCS and AS/RS Shipping Pick List</p>	<p>Right side of screen</p> <p>Header/DISPLAY:</p> <p>Line 1 - Secondary Waste Type Group follow user to select LLW or TRU save to variable (SWTYP)</p> <p>Select BIN, RADDDETAIL, CONLOC, WASTEXT where all BIN_PKG_ID_# = RDET_PKG_ID and RDET_SWTYP_GROUP = "SWTYP" and BIN_PKG_ID_# = CONLOC_PKG_ID and CONLOC_LOCN_ID = "AS_RS" and BIN_PKG_ID_# = CONEXT_PKG_ID and CONEXT_WRAP_STAT_CD = "S"</p> <p>Column 1 - Bin Number</p> <p>BIN_NUM</p> <p>Column 2 thru 5 - Package ID's</p> <p>BIN_PKG_ID_1</p> <p>BIN_PKG_ID_2</p> <p>BIN_PKG_ID_3</p> <p>BIN_PKG_ID_4</p> <p>Column 6 - Shipping Category</p> <p>CONEXT_SHIP_CAT_CD</p> <p>(IS REQUIRED)</p>	<p>N/A</p>		
<p>8</p>			<p>Left side of Screen</p> <p>Display Shipping Pick List</p> <p>Header/DISPLAY:</p> <p>Line 1 - Shipment Number</p> <p>User select from SHIPUST (I) not there allow user create new)</p> <p>Table Maintenance for pop up to add SHIPPICK_SHIP_NUM</p> <p>Drag & Drop from right side of screen</p> <p>Column 1 - BIN #</p> <p>BIN_NUM</p> <p>Column 2 - Package ID's</p> <p>BIN_PKG_ID_1</p> <p>BIN_PKG_ID_2</p> <p>BIN_PKG_ID_3</p> <p>BIN_PKG_ID_4</p> <p>Column 3 - Shipping Type</p> <p>Select RADDDETAIL, where BIN_PKG_ID_1 thru 4 = RDET_PKG_ID)</p> <p>RDET_SWTYP_GROUP</p> <p>Drag and Drop preferred else</p> <p>If user delete from BIN on right screen, add deleted record to left screen, and if user delete from left side of screen add deleted record to right screen. ON SCREEN DELETE ONLY)</p> <p>If user selects COMMIT, save left screen to SHIPPICK, with signature password</p> <p>If user selects SEND TO PCS, (Force a commit first), require signature password</p> <p>Delete from SHIPUST</p> <p>???CL message Previous Location AS_RS New Location = XFRCAR</p> <p>Delete from BIN????</p> <p>Pass parameters to DMS0904 for DMSPCS TSPL if SWTYP = "TRU" or DMSPCS LSPL if SWTYP = "LLW"</p> <p>If user selects EXIT</p> <p>Ask to Save or ignore changes</p> <p>EXIT</p>			

DATA FLOW DIAGRAM/PROCESS MODEL

3.1.6 Process Routing & Pick Lists

LEGEND	
→	= Dataflow
○	= Unit Process
□	= Data Store



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03-14-95

Figure F-3. PM-3.1.6 Process Routing and Picklists.

3.1.7 FISSILE LOADING

UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
1 FISSILE MATERIAL INVENTORY	DMSS1101 Active Buttons: -PRINT -CANCEL -EXIT	All triggers, conditions, and events are based on PCS Location Messages and are noted in the following Process Model Descriptions: 3.1.1.2 Receiving Drum or Box Containers 3.1.3.3 TRU Process Glovebox 3.1.3.4 TRU RWM 3.1.5.2 Shipping Drum or Box Documentation	The FISSMAT table will contain three records, one for the Facility, one for the TRU Process Glovebox, and one for the TRU RWM Process Glovebox. These records are to be displayed as follows. Header/Display: Column 1 - Area Id FISSMAT_ID F = Facility Record T = TRU Glovebox Record R = TRU RWM Glovebox Column 2 - Area FISSMAT_DESCR Column 3 - Fissile Total FISSMAT_RAD_TOTAL Column 4 - Units FISSMAT_UNITS Column 5 - Alarm FISSMAT_ALARM Column 6 - Alarm Limit FISSMAT_LIMIT	FISSMAT	FISSMAT_ID FISSMAT_DESCR FISSMAT_RAD_TOTAL FISSMAT_UNITS FISSMAT_ALARM FISSMAT_LIMIT
2					

Radiologic Inventory for TRU and TRU RWM Gloveboxes Location Diagram

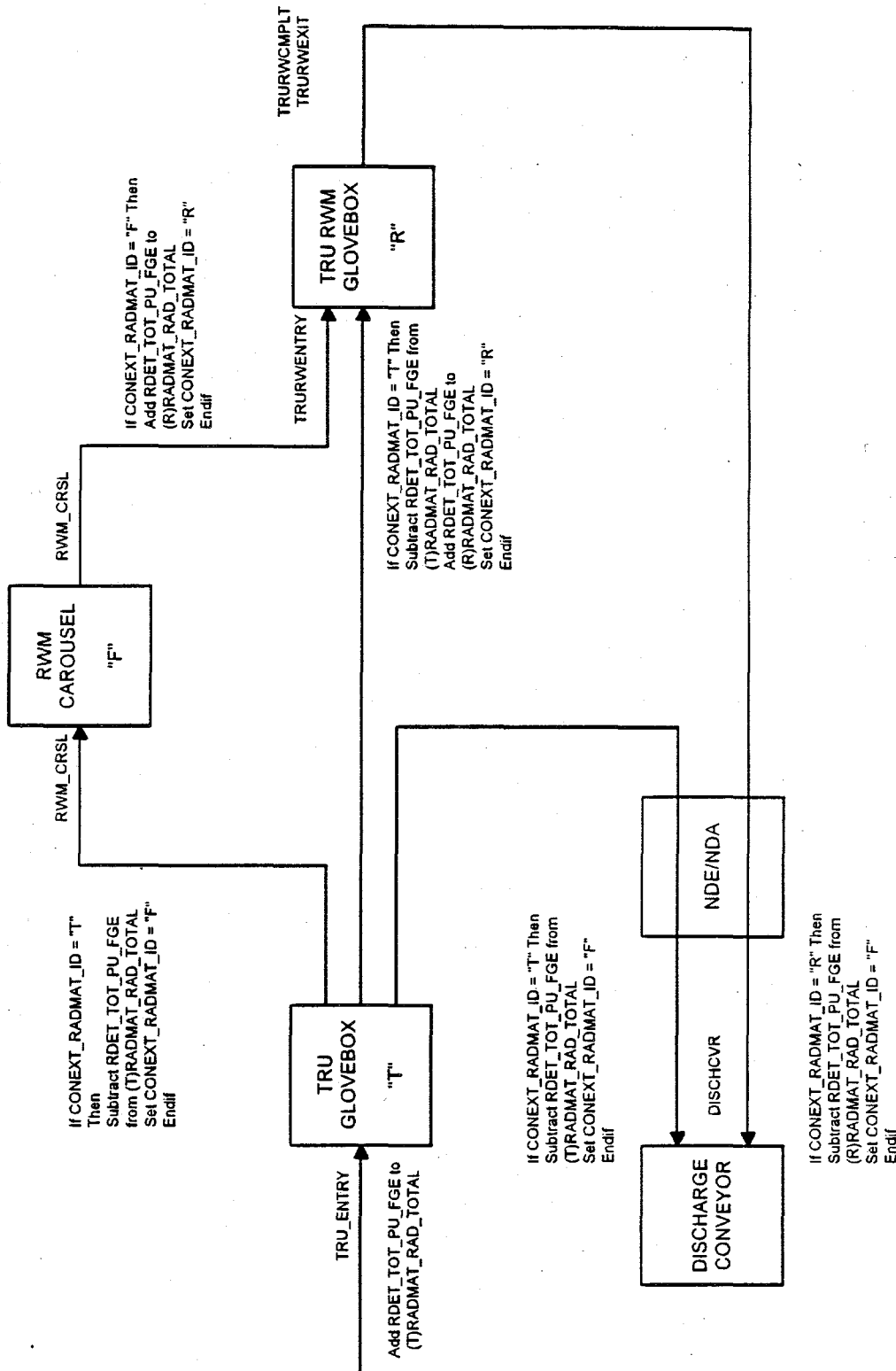


Figure E-4. PM-3.1.7 Radiologic Inventory for TRU and TRU RWM Process Gloveboxes.

3.1.8 WASTE INVENTORY BY LOCATION AND/OR CONTAINER RELATIONSHIPS

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
1	Log all incoming Messages	N/A	Receive a Message	Save Message to file Store Message Types & Date IF ERROR, set error flag, send error message ELSE Store Message String 1 (parsed with " " as the delimiter) as ASCII Store Message String 2 as Binary Set Message Initialization Flag Set Message Sequence Number Convert all Flags from "T" to "Y" and "F" or null to "N" or null ENDIF	MSGLOG	FIELD 1 = MSG_GEN_TYPE FIELD 2 = MSG_SPEC_TYPE Current System Date = MSG_DT "Y" or "N" = MSG_ERROR_TRANS_FLAG All Fields plus delimiter = MSG_STRING_1 All Fields in Binary = MSG_STRING_2 MSG_INIT_FLAG MSG_SEQ_NUM
2	Drum or Box Inventory	PCSDMS CL	DMSCOM to trigger to form for all CONLOC except as noted	Update location	CONLOC	CONLOC_LOCN_ID CONLOC_DT
3			DMSCOM to trigger to form for CONLOC = "RECDCK"	Message received and location updated (Receiving Dock is different-CONLOC not updated until after drum receipt is validated*) Update Received Drums Table IF RECDISP = 0 records RECDISP_BLK_NUM = 1 ELSE RECDISP_BLK_NUM = RECDISP_BLK_NUM + 1 ENDIF *DO NOT Update CONLOC (done in Receiving/Shipping) DO NOT Update CONEXT_WRAP_STAT_CD (done in Receiving/Shipping)	MSGLOG RECDISP	MSG_INIT_FLAG = "DF" FIELD 7 = RECDISP_PKG_ID (Validate that FIELD 7 is repeated for FIELD 6 value) RECDISP_BLK_NUM
4			DMSCOM to trigger for CONLOC = "SWBSTR"	IF the previous location was "BOXNDA", then Set the Container WRAP Status Code (CONEXT_WRAP_STAT_CD) to "Processing Complete" (C) status. ENDIF	CONLOC WASTEXT	CONLOC_LOCN_ID CONLOC_DT CONEXT_WRAP_STAT_CD
5			DMSCOM to trigger for CONLOC = "AS_RS"	Add the Bin number, container count, and package IDs to the Bin List (BIN).	CONLOC BIN	CONLOC_LOCN_ID CONLOC_DT FIELD 5 = BIN_NUM FIELD 6 = BIN_CONTENT_NUM FIELD 7 (1-4) = BIN_PKG_ID (1-4)

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
6			DMSCOM to trigger for CONLOC = "PSTND"	Delete the Bin List record (BIN) that matches the package ID(s) in this message. Delete BIN where FIELD 7 = BIN_PKG_ID_1-4	CONLOC BIN	CONLOC_LOCN_ID CONLOC_DT BIN_NUM BIN_CONTENT_NUM BIN_PKG_ID (1-4)
7			DMSCOM only CONLOC = "AGVPANC_A" or "AGVPANC_B" or "AGVGEAC_A" or "AGVGEAC_B"	AGV P&D at Vault Conveyor Locations IF CONLOC = "AGVPANC_A" or "AGVPANC_B", send message to SIE (Generate message to download container database to the PAN unit) ENDIF IF CONLOC = "AGVGEAC_A" or "AGVGEAC_B", send message to SIE (Generate message to download container database to the GEA unit) ENDIF Generate message to SIE instructing it to transmit the drum database to the specified vault location. (GEA_A, GEA_B, PAN_A, PAN_B) DMSIE SDP or SDG	CONLOC MSGLOG	CONLOC_LOCN_ID CONLOC_DT

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
8			DMSCOM to Trigger to Form CONLOC_LOCN_ID = "LLW_ENTRY"	<p>Update location, IF CONR_CD = "0", THEN Send DMSPCS CL message with location = "LLW_ENTRY" and package ID = CONR_FROM_PKG_ID (ID of overpacked inner drum sent to PCS) COPY all container records, STORE CONR_FROM_PKG_ID in CON_SEC_PKG_ID and temporary pck ID in CON_PKG_ID) DELETE CONREL, (SWITS CONREL also deleted) Set CON_PKG_STATUS = "U" (Overpack to empty - SWITS status code) SWITS also updated Set CONEXT_USE_CD = "EC" (WRAP status code) ELSE Send DMSPCS CL message with location = "LLW_ENTRY" and package ID = CONLOC_PKG_ID (ID of 55-gallon drum, which is not overpacked, sent to PCS) COPY all container records, STORE CONR_FROM_PKG_ID in CON_SEC_PKG_ID and temporary pck ID in CON_PKG_ID) Set CONEXT_USE_CD = "WC" (WRAP status code) ENDIF ENDIF</p>		
9			DMSCOM to trigger for CONLOC = "LLW_EXIT"	<p>IF LOCN_ID = "LLW_EXIT" and CONEXT_USE_CD = "EC" then CONEXT_USE_CD = "PD" Set Variable accumulative weight = "0" LLW RWM Compliant Waste Loadout Port/Lift Table IF CONEXT_USE_CD < > "PD" THEN CONEXT_USE_CD = "PD" ENDIF</p>	<p>CONLOC WASTEXT</p>	<p>CONLOC_DT CONLOC_LOCN_ID CONEXT_USE_CD</p>
10			DMSCOM to trigger for CONLOC = "LLWRWCMPLT"	<p>LLW RWM Treated Waste Loadout Port/Lift Table IF CONEXT_USE_CD < > "PD" THEN CONEXT_USE_CD = "PD" ENDIF</p>	<p>CONLOC WASTEXT</p>	<p>CONLOC_DT CONLOC_LOCN_ID CONEXT_USE_CD</p>
11			DMSCOM to trigger for CONLOC = "LLWRWEXIT"	<p>LLW RWM Treated Waste Loadout Port/Lift Table IF CONEXT_USE_CD < > "PD" THEN CONEXT_USE_CD = "PD" ENDIF</p>	<p>CONLOC WASTEXT</p>	<p>CONLOC_DT CONLOC_LOCN_ID CONEXT_USE_CD</p>

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
12			DMSCOM to trigger form CONLOC = "TRU_ENTRY"	<p>TRU Entry Glovebox Port/Lift Table</p> <p>Update location. IF CONR_CD = "O", THEN Send DMSPCS CL message with location = "TRU_ENTRY" and package ID = CONR_FROM_PKG_ID (ID of overpacked inner drum sent to PCS) COPY all container records, STORE CONR_FROM_PKG_ID in CON_SEC_PKG_ID and temporary pck ID in CON_PKG_ID DELETE CONREL (SWITS CONREL also deleted) Set CON_PKG_STATUS = "U" (Overpack to empty SWITS status code) SWITS also updated Set CONEXT_USE_CD = "EC" (WRAP status code) ELSE Send DMSPCS CL message with location = "TRU_ENTRY" and package ID = CONLOC_PKG_ID (ID of 55-gallon drum, which is not overpacked, sent to PCS) COPY all container records, STORE CONR_FROM_PKG_ID in CON_SEC_PKG_ID and temporary pck ID in CON_PKG_ID Set CONEXT_USE_CD = "WC" (WRAP status code) ENDIF ENDIF</p> <p>Select RADMAT_ID = "T" For msg PKG_ID Add RDET_TOT_PU_FGE to RADMAT_RAD_TOTAL (use the inner drum RDET_TOT_PU_FGE if CON_USE_CD = "O") IF RADMAT_RAD_TOTAL > RADMAT_LIMIT then RADMAT_ALARM = "Y" ELSE RADMAT_ALARM = "N" ENDIF Send FML msg to PCS with location = TRU_GLVEBX</p>	<p>CONLOC</p> <p>RADMAT</p> <p>RADDETAIL</p>	<p>CONLOC_DT CONLOC_LOCN_ID</p> <p>RADMAT_RAD_TOTAL RADMAT_ALARM</p> <p>RDET_TOT_PU_FGE</p>
13			DMSCOM to trigger for CONLOC = "TRU_COMPCT"	<p>Mating of TRU 85-gallon Empty Drum to Compaction Loadout Port/Lift Table</p> <p>Set CONEXT_RADMAT_ID = "T" Set CONEXT_USE_CD = "PD"</p>	<p>CONLOC</p> <p>WASTEXT</p>	<p>CONLOC_DT CONLOC_LOCN_ID</p> <p>CONEXT_USE_CD</p>

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
14			DMSCOM to trigger for CONLOC = "TRU_LDOUT1"	Mating of TRU 55-gallon Empty Drum to Compaction Loadout Port/Lift Table Set CONEXT_RADMAT_ID = "T" Set CONEXT_USE_CD = "PD"	CONLOC WASTEXT	CONLOC.DT CONLOC_LOCN_ID CONEXT_RADMAT_ID CONEXT_USE_CD
15			DMSCOM to trigger for CONLOC = "TRU_LDOUT2"	Mating of TRU 55-gallon Empty Drum to Compaction Loadout Port/Lift Table Set CONEXT_RADMAT_ID = "T" Set CONEXT_USE_CD = "PD"	CONLOC WASTEXT	CONLOC.DT CONLOC_LOCN_ID CONEXT_RADMAT_ID CONEXT_USE_CD
16			DMSCOM to trigger for CONLOC = "TRU_RWMFRT"	TRU Transfer Port/Lift Table for RWM Transfer Drums Set CONEXT_RADMAT_ID = "T"	CONLOC WASTEXT	CONLOC.DT CONLOC_LOCN_ID CONEXT_RADMAT_ID

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
17			DMSCOM to trigger for CONLOC = "TRURWENTRY"	<pre> TRU RWM Transfer Drum Port/Lift Table IF CONEXT_RADMAT_ID = "T" THEN Select RADMAT_ID = "T" For msg PKG_ID Subtract RDET_TOT_PU_FGE from RADMAT_RAD_TOTAL Set RADMAT_ALARM = "N" Send FML msg to PCS with location = "TRU_GLVBX" Select RADMAT_ID = "R" For msg PKG_ID Add RDET_TOT_PU_FGE to RADMAT_RAD_TOTAL IF RADMAT_RAD_TOTAL > RADMAT_LIMIT then RADMAT_ALARM = "Y" RADMAT_GB_PKG_ID = msg PKG_ID ELSE RADMAT_ALARM = "N" ENDIF Send FML msg to PCS with location = "TRURWGB" Set CONEXT_RADMAT_ID = "R" ELSE IF CONEXT_RADMAT_ID = "F" THEN Select RADMAT_ID = "R" For msg PKG_ID Add RDET_TOT_PU_FGE to RADMAT_RAD_TOTAL IF RADMAT_RAD_TOTAL > RADMAT_LIMIT then RADMAT_ALARM = "Y" RADMAT_GB_PKG_ID = msg PKG_ID ELSE RADMAT_ALARM = "N" ENDIF Send FML msg to PCS with location = "TRURWGB" Set CONEXT_RADMAT_ID = "R" ENDIF </pre>	<p>CONLOC</p> <p>WASTEXT</p> <p>RADMAT</p> <p>RADDETAIL</p>	<p>CONLOC_DT CONLOC_LOCN_ID</p> <p>CONEXT_RADMAT_ID</p> <p>RADMAT_ID RADMAT_RAD_TOT RADMAT_ALARM RADMAT_GB_PKG_ID</p> <p>RDET_TOT_PU_FGE</p>
18			DMSCOM to trigger for CONLOC = "TRURWCMPLT"	<pre> TRU RWM Compliant Waste Loadout Port/Lift Table Set CONEXT_RADMAT_ID = "R" Set CONEXT_USE_CD = "PD" </pre>	<p>CONLOC</p> <p>WASTEXT</p>	<p>CONLOC_DT CONLOC_LOCN_ID</p> <p>CONEXT_RADMAT_ID CONEXT_USE_CD</p>

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
19			DMSCOM to trigger for CONLOC = "TRURWEXIT"	<p>TRU RWM Treated Waste Loadout Port/Lift Table</p> <p>Set CONEXT_RADMAT_ID = "R"</p> <p>Set CONEXT_USE_CD = "PD"</p>	CONLOC	CONLOC_DT CONLOC_LOCN_ID CONEXT_RADMAT_ID CONEXT_USE_CD
20			DMSCOM to trigger for CONLOC = "RWM_CRSL"	<p>RWM Carousel in Process Area</p> <p>IF CONEXT_RADMAT_ID = "T" THEN</p> <p> Select RADMAT_ID = "T"</p> <p> For msg PKG_ID</p> <p> Subtract RDET_TOT_PU_FGE from RADMAT_RAD_TOTAL</p> <p> RADMAT_ALARM = "N"</p> <p> Send FML msg to PCS with location = "TRU_GLVEBX"</p> <p> Set CONEXT_RADMAT_ID = "F"</p> <p>ENDIF</p>	CONLOC RADDDETAIL RADMAT WASTEXT	CONLOC_DT CONLOC_LOCN_ID RDET_TOT_PU_FGE RADMAT_ALARM CONEXT_RADMAT_ID
21			DMSCOM to trigger for CONLOC = "DISCHCVR"	<p>S&R Drum Discharge Conveyor</p> <p>Set the Container WRAP Status Code to "Processing Complete" status CONEXT_WRAP_STAT_CD = "C".</p> <p>Create DISCHARGE record, append to EOF.</p> <p>IF CONEXT_RADMAT_ID = "T" THEN</p> <p> Select RADMAT_ID = "T"</p> <p> For msg PKG_ID</p> <p> Subtract RDET_TOT_PU_FGE from RADMAT_RAD_TOTAL</p> <p> RADMAT_ALARM = "N"</p> <p> ENDIF</p> <p> Send FML msg to PCS with location = "TRU_GLVEBX"</p> <p> Set CONEXT_RADMAT_ID = "F"</p> <p>ELSE</p> <p> IF CONEXT_RADMAT_ID = "R" THEN</p> <p> Select RADMAT_ID = "R"</p> <p> For msg PKG_ID</p> <p> Subtract RDET_TOT_PU_FGE from RADMAT_RAD_TOTAL</p> <p> RADMAT_ALARM = "N"</p> <p> ENDIF</p> <p> Send FML msg to PCS with location = "TRURWGB"</p> <p> Set CONEXT_RADMAT_ID = "F"</p>	CONLOC WASTEXT DISCHARGE RADDDETAIL RADMAT	CONLOC_DT CONLOC_LOCN_ID CONEXT_WRAP_STAT_CD CONEXT_RADMAT_ID *DISCHARGE_SEQ_NUM DISCHARGE_PKG_ID RDET_TOT_PU_FGE RADMAT_ALARM

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
22			DMSCOM to trigger for CONLOC = "XFRCAR"	AS/RS Transfer Car Delete the Bin List Record that matches the package IDs in this message. Delete BIN where FIELD 7 = BIN_PKG_ID_1-4	CONLOC BIN	CONLOC_LOCN_ID CONLOC_DT BIN_NUM BIN_CONTENT_NUM BIN_PKG_ID (1-4)
23			DMSCOM to trigger for CONLOC = "BDCVYR_A" or "BDCVYR_B"	Background Drum Storage Conveyors IF CONLOC = "BDCVYR_A" or "BDCVYR_B", transmit message (DMSSIE DD) to SIE (background drum database sent to SIE when drum placed on background conveyor) ENDIF	CONLOC	CONLOC_LOCN_ID CONLOC_DT
24			DMSCOM to trigger for CONLOC = "N_NCRSL"	NDE/NDA Carousel IF CONLOC = "N_NCRSL" and CONEXT_USE_CD = "VH" or "VL" transmit message (DMSSIE DD) to SIE (verification drum database sent to SIE when verification drum placed in N/N carousel) ENDIF	CONLOC	CONLOC_LOCN_ID CONLOC_DT
25		PCSDMS CLW		Message received and location & weight are updated.		
26			DMSCOM to trigger CONLOC = "LLW_PUCK"	LLW Exit Glovebox Puck Receipt Position (LLW_PUCK) Update the DMS with the LLW puck bar code for the LLW drum PIN for the "oldest" drum with CONLOC = "LLW_CMPECT" as the current location. Record the puck weight in the database (CON_GROSS_WGT)	CONLOC WASTE	CONLOC_LOCN_ID CONLOC_DT CON_GROSS_WGT

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
27			<p>DMSCOM to trigger to form for CONLOC = "INFDCVYRW"</p>	<p>Set the Container WRAP Status Code (CONEXT_WRAP_STAT_CD) to "In Processing" (I) status.</p> <pre> IF (VER_CON_GROSS_WGT) = null THEN load weight into (VER_CON_GROSS_WGT) IF ABS((VER_CON_GROSS_WGT) - (CON_GROSS_WGT)) > ((VERLIM_WGT value from WRAPMISC) * (CON_GROSS_WGT)) THEN set (VER_CON_GROSS_WGT_FLAG) = "Y" Display error on DMS terminal at discharge conveyor ELSE set (VER_CON_GROSS_WGT_FLAG) = "N" ENDIF IF (VER_CON_GROSS_WGT) > 454 KG THEN set (VER_CON_GROSS_WGT_FLAG) = "Y" Display error on DMS terminal at discharge conveyor ELSE set (VER_CON_GROSS_WGT_FLAG) = "N" ENDIF IF CONLOC = "INFDCVYRW" transmit message (DMSSIE DD) to SIE (Waste drum database to SIE when drums located on infeced conveyor) ENDIF If the outer drum is an overpack, the PIN and data for the inner waste drum will be sent to the SIE. IF MSG_PKG_ID = (PROC_PKG_ID) on the Process Pick List, THEN Delete the drum PIN (PROC_PKG_ID) from the Process Pick List. ENDIF </pre>	<p>CONLOC VERCON WRAPMISC WASTE PROCESS</p>	<p>CONLOC_LOCN_ID CONLOC_DT VER_CON_GROSS_WGT VERLIM_WGT = .10 CON_GROSS_WGT Delete all</p>

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
28			DMSCOM to trigger to form for CONLOC = "BOXNDE"	<p>Set the Container WRAP Status Code (CONEXT_WRAP_STAT_CD) to "In Processing" (I) status.</p> <p>IF (VER_CON_GROSS_WGT) = null THEN load weight into (VER_CON_GROSS_WGT) IF ABS(VER_CON_GROSS_WGT) * (CON_GROSS_WGT) > (VERLIM_WGT from WRAPMISC) * (CON_GROSS_WGT) THEN set (VER_CON_GROSS_WGT_FLAG) = "Y" Display error on DMS terminal at discharge conveyor ELSE Set (VER_CON_GROSS_WGT_FLAG) = "N" ENDIF IF (VER_CON_GROSS_WGT) > 1816 KG THEN Set (VER_CON_GROSS_WGT_FLAG) = "Y" Display error on DMS terminal at discharge conveyor ELSE Set (VER_CON_GROSS_WGT_FLAG) = "N" ENDIF ENDIF</p> <p>The box characterization data and isotopic quantity data (if available) will be sent to the BWAS (TBD).</p> <p>????????NEED MORE INFO????????????????</p>	<p>CONLOC</p> <p>VERCON</p> <p>WRAPMISC</p> <p>WASTE</p> <p>MESS????</p>	<p>CONLOC_LOCN_ID</p> <p>CONLOC_DT</p> <p>VER_CON_GROSS_WGT</p> <p>VERLIM_WGT = .10</p> <p>CON_GROSS_WGT</p>
29			DMSCOM trigger to form for CONLOC = "AIRCVR_B1" or "AIRCVR_A3"	<p>Airlock Conveyor B1 or A3 (may be used for out going if the B airlock is broken.)</p> <p>IF CONEXT_USE_CD = "PD", THEN Load message weight into (CON_GROSS_WGT) IF (CON_GROSS_WGT) > 454 kgs THEN Display error on RWM pedestal terminal ENDIF ENDIF</p> <p>IF CONLOC = "AIRCVR_B1" or "AIRCVR_A3" and CONEXT_USE_CD = "PD" transmit message (DMSSIE_DD) to SIE (product drum database sent to SIE when product drum is placed on an airlock conveyor going to N/N Area) ENDIF</p>	<p>CONLOC</p> <p>WASTE</p>	<p>CONLOC_LOCN_ID</p> <p>CONLOC_DT</p> <p>CON_GROSS_WGT</p>

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
30			DMSCOM trigger to form for CONLOC = "DISCHVRW"	S&R Drum Discharge Conveyor with Weigh Scale Delete DISCHARGE_PKG_ID where (prior location) CONLOC_LOCN = "DISCHVRW" IF CONEXT_USE_CD <> "EC" THEN IF (VER_CON_GROSS_WGT) = null THEN load weight into (VER_CON_GROSS_WGT) IF ABS((VER_CON_GROSS_WGT) - (CON_GROSS_WGT)) > (VERLIM_WGT from WRAPMISC) * (CON_GROSS_WGT), THEN Display error on DMS terminal at discharge conveyor ELSE Set (VER_CON_GROSS_WGT_FLAG) = "Y" ENDIF Set (VER_CON_GROSS_WGT_FLAG) = "N" ENDIF IF (VER_CON_GROSS_WGT) > 454 KG, THEN Display error on DMS terminal at discharge conveyor ENDIF ENDIF	CONLOC DISCHARGE VERWASTE WRAPMISC WASTE	CONLOC_LOCN_ID CONLOC_DT DELETE VER_CON_GROSS_WGT VERLIM_WGT = .10 CON_GROSS_WGT
31		DMSPCS CL	Form to DMSCOM	WRAP 1 Receiving Dock Parameter passed to DMSCOM (MSG_INIT_FLAG = "FD") User selection of Package IDS (count for FIELD 4) = FIELD 5 Waste containers that have been received and accepted into WRAP at the receiving dock, CONLOC = "RECDCK"	MSGLOG CONLOC	MSG_GEN_TYPE = "DMSPCS" MSG_SPEC_TYPE = "CL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD" CONLOC_PKG_ID, CONLOC_LOCN_ID, CONLOC_DT
32			DMSCOM only	TRU and LLW Gloveboxes Inner drum IDs passed to the PCS for overpack drums at the TRU and LLW entry gloveboxes, 55-gallon drum PINs returned to the PCS for drums which are not overpacked (See PCSDMS CL messages for "LLW_ENTRY" and "TRU_ENTRY")	MSGLOG	MSG_GEN_TYPE = "DMSPCS" MSG_SPEC_TYPE = "CL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
33			Form to DMSCOM	WRAP 1 Shipping Dock Waste containers that have previously been received into the WRAP facility and subsequently shipped, CONLOC = "IN_TRANSIT" (location update to be generated in the Shipping Process Module)	MSGLOG	MSG_GEN_TYPE = "DMSPCS" MSG_SPEC_TYPE = "CL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
34		DMSPCS FML	Parameter passed to DMSCOM	Fissile Material Limit for the TRU and TRURWM gloveboxes, query is based on locations. CONLOC = "TRU_GLBVEX" or "TRURWGB" in response to message (PCSDMS CL). Conditions for sending the message are CONLOC = "TRU_ENTRY", "TRURW_ENTRY", or "DISCHCVR"	MSGLOG	MSG_GEN = TYPE = "DMSPCS" MSG_SPEC_TYPE = "CL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
35		DMSPCS FCL	Parameter passed to DMSCOM	Facility Curie Limit, Updated via Shipping and Receiving modules Parameter passed.	MSGLOG	MSG_GEN = TYPE = "DMSPCS" MSG_SPEC_TYPE = "TSPL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
36	Packet Removal from LLW and TRU Gloveboxes	PCSDMS RWPT	DMSCOM to trigger	Packet to transfer drum Create CONREL_set to overpack (O) IF CONREL ≥ "6", set CONEXT_CNTR_STATUS = "F" (allow operator to manually update the CONEXT_CNTR_STATUS)	CONREL	• CONR FROM_PKG_ID • CONR TO_PKG_ID • CONR_REL_CD CONR_DT
37	Packet Assay Monitor (PAM) results to DMS	PCSDMS PAMR	DMSCOM to trigger to form	Convert Pu240 equivalent to Pu239 FGE. STORE Pu240 equivalent value from PAM in variable Calculate Pu239 FGE = Pu240 Equiv * PROF_PU239 (CONEXT_PROF_ID) Display value IF followed by a PCSDMS CL message (TRU_SORT), THEN Store Pu240 equivalent in PAM_QTY and Store Pu239 FGE to PAM_PU_FGE for the CONEXT_PKG_ID in the CL message ELSE Delete previous PAMR variables ENDIF	PROFILE	PROF_PU239 (239/240 ratio field * 240 value = 239 value)
38		PCSDMS RWPP	DMSCOM to trigger	Packet from parent drum relationship Create WASTE Create WASTEXT Set CONEXT_USE_CD = "PK" Create MATERIAL Create CONREL = Split (S)	WASTE WASTEXT MATERIAL CONREL	Create all Create all Create all • CONR FROM_PKG_ID • CONR TO_PKG_ID • CONR_REL_CD CONR_DT

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
39	Purge Port Inventory	PCSDMS PPL	DMSCOM to trigger	Update location IF CONLOC_LOCN_ID = "LLWRW_PP" or "LLW_PP" or "TRU_PP" or "TRURW_PP" and CONR_FROM_PKG_ID = "field #5" THEN Delete CONREL	CONREL	<ul style="list-style-type: none"> • CONR_FROM_PKG_ID • CONR_TO_PKG_ID • CONR_REL_CD CONR_DT CONLOC_LOCN_ID CONLOC_DT
40		PCSDMS PPTP	DMSCOM to trigger	Purge port to transfer pig Update location for both the purge port and the transfer pig; Create CONREL, set to overpack (O)	CONLOC	<ul style="list-style-type: none"> • CONR_FROM_PKG_ID • CONR_TO_PKG_ID • CONR_REL_CD CONR_DT CONLOC_LOCN_ID CONLOC_DT
41	Sample Inventory	PCSDMS SPDP	DMSCOM to trigger	Sample taken from packet or drum Create CONREL = Split (S) ???????????????????????????????? If SPDP (PKG ID = CONR FROM_PKG_ID and CONR_TO_PKG_ID = CONLOC_PKG_ID and CONLOC_LOCN_ID = LLWRWCMPLT then Packet unsplit and delete CONREL REVISIT DURING SAMPLE MANAGEMENT MODULE REVIEW ????????????????????????????????	CONREL	CONR_REL_CD (Set to related (RI)), CONR_DT, CONR_FROM_PKG_ID, CONR_TO_PKG_ID
42		PCSDMS SPP	DMSCOM to trigger	Sample to purge port Create CONREL, set to overpack (O) ???????????????????????????????? Create chain of custody, auto-update COC_LOCATION, COC_SAMPLE_ID. Create sample data record, auto-update, SAM_SAMPLE_ID, SAM_TAKEN_DT; user update SAM_COMMENTS, SAM_TAKEN_BY REVISIT DURING SAMPLE MANAGEMENT MODULE REVIEW		
43	LLW Puck Inventory	PCSDMS POPD	DMSCOM to trigger	Puck to loadout drum Create CONREL, set to combine (C) For puck addition, update container record	CONREL	CONR_REL_CD (Set to related (RI)), CONR_DT, CONR_FROM_PKG_ID, CONR_TO_PKG_ID

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
44	Packet/Non-compliant Item Inventory	PCSDMS NCIP	DMSCOM to trigger	<p>Splitting compliant waste from noncompliant packet (noncompliant item related to packet which is related to parent drum)</p> <p>Create CONREL = Split (S) Set CON_PKG_STATUS = "R" for original packet Create container record for noncompliant item removed, auto-update CONEXT_USE_CD = "PK" and CON_PKG_DT = "System Date" Set CON_PKG_STATUS = "G" for packets</p> <p>Create CONREL = Split (S) Set CONR_TO_PKG_ID = "LLWRWCMPLT" or "TRURWCMPLT" for original packet</p>	<p>CONREL</p> <p>WASTE</p>	<p>CONR_REL_CD (Set to split (S)), CONR_DT, CONR_FROM_PKG_ID, CONR_TO_PKG_ID</p> <p>CON_PKG_STATUS = "G" CON_PKG_DT</p>
45	Aerosol Can Collection Container Inventory	PCSDMS ACC	DMSCOM to trigger	<p>Aerosol can to collection container Create CONREL, set to related (R)</p> <p>Aerosol can to loadout drum Create CONREL, set to combine (C)</p> <p>For aerosol can to collection container create container record, auto-update CONEXT_USE_CD and CON_PKG_DT</p>	<p>CONREL</p> <p>WASTEXT</p>	<p>••CONR_FROM_PKG_ID ••CONR_TO_PKG_ID • CONR_REL_CD CONR_DT</p> <p>CONEXT_USE_CD CONEXT_PKG_ID</p>
46	RWM Transfer Drum Packets	PCSDMS REMT	DMSCOM to trigger	<p>Packet removed from transfer drum, packet to sort table, delete CONREL record where CON_PKG_ID = CONR_FROM_PKG_ID and CONR_REL_CD = "O"</p> <p>Check CONREL for number of packets in transfer drum; IF "0", update CONEXT_CNTR_STATUS = "E" IF not "0", update CONEXT_CNTR_STATUS = "P" (Operator to manually update the CONEXT_CNTR_STATUS)</p>	<p>CONREL</p> <p>CONEXT</p>	<p>Delete CONREL record CONEXT_CNTR_STATUS</p>
47		PCSDMS ADDT	DMSCOM to trigger	<p>Packet to transfer drum Create CONREL, set to overpack (O)</p> <p>IF CONREL > "6", set CONEXT_CNTR_STATUS = "F" (allow operator to manually update the CONEXT_CNTR_STATUS)</p>	<p>CONREL</p> <p>CONEXT</p>	<p>Create CONREL record CONEXT_CNTR_STATUS</p>

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
48	Treatment Container Inventory	PCSDMS NCIT	DMSCOM trigger to form	<p>(Packet to RWM Treatment location) Update location Delete CONREL (packet and transfer drum) Check to see if packet is on worksheet (WORKITEM) for worksheet ID being used (WORKSHEET) IF not in WORKITEM THEN Display message to user "Not on Worksheet" ELSE Check off PIN on DMS display (in RWM glovebox) IF all items to be treated which are contained in this transfer container have been scanned THEN IF All WORKSHEET_PKG_ID have been scanned THEN Display treatment procedure ELSE Display list of PINs for next XRF drum ENDIF ENDIF ENDIF</p>	CONREL	<ul style="list-style-type: none"> • CONR_FROM_PKG_ID • CONR_TO_PKG_ID • CONR_REL_CD CONR_DT
49		PCSDMS TRSP	DMSCOM trigger to form	<p>(Sample to RWM Treatment location) Update location Delete CONREL (sample and purge port) Check to see if sample is on worksheet (WORKITEM) for worksheet ID being used (WORKSHEET) IF not in WORKITEM THEN Display message to user "Not on Worksheet" ELSE Check off PIN on DMS display (in RWM glovebox) IF all items to be treated which are contained in this transfer container have been scanned THEN IF All WORKSHEET_PKG_ID have been scanned, THEN Display treatment procedure ELSE Display list of PINs for next XRF drum ENDIF ENDIF ENDIF</p>	CONREL	<ul style="list-style-type: none"> • CONR_FROM_PKG_ID • CONR_TO_PKG_ID • CONR_REL_CD CONR_DT
50		PCSDMS TCIC	DMSCOM	<p>Create CONREL (from packet or sample to treatment container relationship) CONR_REL_CD = "C" (combine) ELSE</p>	CONREL	<ul style="list-style-type: none"> • CONR_FROM_PKG_ID • CONR_TO_PKG_ID • CONR_REL_CD CONR_DT
51		PCSDMS TCLD	DMSCOM	<p>Create CONREL (from treatment to loadout drum relationship) CONR_REL_CD = "C" (combine)</p>	CONREL	<ul style="list-style-type: none"> • CONR_FROM_PKG_ID • CONR_TO_PKG_ID • CONR_REL_CD CONR_DT

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
52	Overpack Contamination Status Update	PCSDMS DCS	DMSCOM to trigger	Update contamination status, CONEXT_CONTAM_FLAG	WASTEXT	CONEXT_CONTAM_FLAG
53	Message Passthrough - BWAS Status	PCSRDMS RBWA	DMSCOM only	PCS Request BWAS status from DMS Send message (DMSRBWA RBWA) to BWAS		
54	BWAS Status	DMSRBWA RBWA	DMSCOM only	DMS Request BWAS status from BWAS		
55	BWAS Status	BWADMS SBWA	DMSCOM only	BWAS provide BWAS status to DMS Send message (DMSPCS SBWA) to PCS		
56	BWAS Status	DMSPCS SBWA	DMSCOM only	DMS provide BWAS status to PCS		
57	Abort BWAS Assay	PCSDMS ABWA	DMSCOM only	PCS directs DMS to abort BWAS assay DMS send message (DMSBWAS ABWA) to BWAS to abort assay		
58	Abort BWAS Assay	DMSBWA ABWA	DMSCOM only	DMS requests BWAS to abort		
59	Abort BWAS Assay	BWADMS BAA	DMSCOM only	BWAS provides abort status to DMS DMS sends message (DMSPCS BAA) to provide abort status to PCS		
60	Abort BWAS Assay	DMSPCS BAA	DMSCOM only	Provide BWAS abort status to PCS		
61	BWAS Start	BWADMS BAS	DMSCOM only	BWAS assay started DMS send message (DMSPCS BAS) to note BWAS started		
62	BWAS Start	DMSPCS BAS	DMSCOM only	DMS provide BWAS start status to PCS		
63	BWAS Complete	BWADMS BAC	DMSCOM only	BWAS assay completed DMS send message (DMSPCS BAC) to note BWAS assay complete		
64	BWAS Complete	DMSPCS BAC	DMSCOM only	Send message to PCS, BWAS assay complete		
65	Assay Criticality Alert	SIEDMS CRIT	DMSCOM trigger to form	Display message and generate DMSPCS CRIT		
66	Assay Criticality Alert	BWADMS CRIT	DMSCOM trigger to form	Display message and generate DMSPCS CRIT		

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
67	Assay Criticality Alert	DMSPCS CRIT	DMSCOM only	Send message to PCS, assay criticality alert		
68		PCSRDMS RSIE	DMSCOM only	PCS request SIE status DMS sends message (DMRSIE RSIE) to SIE		
69		DMRSIE RSIE	DMSCOM only	Request status of SIE		
70		SIEDMS SSIE	DMSCOM only	Status of SIE provided to DMS DMS provides status message (DMSPCS SSIE) to PCS		
71		DMSPCS SSIE	DMSCOM only	Provide status of SIE to PCS		
72		PCSRDMS RBWA	DMSCOM only	PCS request BWAS status DMS sends message (DMSRBWA RBWA) to BWAS		
73		DMSRBWA RBWA	DMSCOM only	Request status of BWAS		
74		BWADMS SBWA	DMSCOM only	Status of BWAS provided to DMS DMS provides status message (DMSPCS SBWA) to PCS		
75		DMSPCS SBWA	DMSCOM only	Provide status of BWAS to PCS		
76						
77	Status Reporting	PCSRDMS RDMS	DMSCOM only	Respond to message with DMS status DMS provides status message (DMSPCS SDMS) to PCS		
78		DMSPCS SDMS	DMSCOM only	Provide status of DMS to PCS (Also sent in response to possible-error)		
79		PCSDMS SPCS	DMSCOM If error, DMSCOM to trigger	Status of PCS provided to DMS IF error, retransmit all picklists ??? LOGIC TO BE ADDED WHEN ERRORS ARE DEFINED ???		
80	Pick Lists	DMSPCS PPLI	Form to DMSCOM	Process Pick List transmitted to PCS Parameter passed to DMSCOM (MSG_INIT_FLAG = "FD") Select all PROCLIST where PROC_PCS_FLAG <> null	PROCLIST MSGLOG	FIELD 4 = PROC_PKG_ID FIELD 5 = PROC_ROUTE_CD FIELD 6 = PROC_SAMPLE_FLAG FIELD 7 = PROC_COMPLIANT_FLAG MSG_GEN_TYPE = "DMSPCS" MSG_SPEC_TYPE = "PPLI" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
81	AS/RS Transfer Car Pick List	DMSPCS TCPL	Form to DMSCOM	Transfer Car Pick List transmitted to PCS Parameter passed to DMSCOM (MSG_INIT_FLAG = "FD") User selection of Package IDs (count for FIELD 3) = FIELD 4	MSGLOG	MSG_GEN = TYPE = "DMSPCS" MSG_SPEC_TYPE = "TCPL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
82	LLW Shipping Pick List	DMSPCS LSPL	Form to DMSCOM	LLW Shipping Pick List transmitted to PCS Parameter passed to DMSCOM (MSG_INIT_FLAG = "FD") User selection of Package IDs (count for FIELD 3) = FIELD 4	MSGLOG	MSG_GEN = TYPE = "DMSPCS" MSG_SPEC_TYPE = "LSPL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
83	TRU Shipping Pick List (to Head Gas Analysis)	DMSPCS TSPL	Form to DMSCOM	TRU Shipping Pick List transmitted to PCS Parameter passed to DMSCOM (MSG_INIT_FLAG = "FD") User selection of Package IDs (count for FIELD 3) = FIELD 4	MSGLOG	MSG_GEN = TYPE = "DMSPCS" MSG_SPEC_TYPE = "TSPL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
84	TRUPACT Assembly Pick List	DMSPCS TAPL	Form to DMSCOM	TRUPACT Shipping Pick List transmitted to PCS Parameter passed to DMSCOM (MSG_INIT_FLAG = "FD") User selection of Package IDs (count for FIELD 3) = FIELD 4	MSGLOG	MSG_GEN = TYPE = "DMSPCS" MSG_SPEC_TYPE = "TAPL" MSG_DT = Current System Date MSG_INIT_FLAG = "FD"
85	Assay Data	DMSSIE DD	DMSCOM to trigger	This message is sent in response to location updates (CL messages) occurring for locations: "BDCVYR_A", "BDCVYR_B", and "N_NCRSL". This message is also sent in response to location/weight updates (CLW messages) "INFDCVYRW", "AIRCVR_B1" or "AIRCVR_A3".	(drum database record)	
86	SIE to transmit database to PAN	DMSRSIE SDP	DMSCOM only	Generate message to download container database to the PAN unit		
87	SIE to transmit database to GEA	DMSRSIE SDG	DMSCOM only	Generate message to download container database to the GEA unit		
88	Assay results from SIE to DMS	SIEDMS RESS	DMSCOM trigger to form	Will be completed during the NDA module review		

SEQ NUM	UNIT PROCESS	SCREENS AND REPORTS	TRIGGER	CONDITION/EVENT	DATA STORE	ATTRIBUTE
89	SIE notifies DMS that Non-listed, long-lived nuclides detected	SIEDMS NLLL	DMSCOM trigger to form	Will be completed during the NDA module review		

DATA FLOW DIAGRAM/PROCESS MODEL
3.1.8 COMMUNICATIONS MESSAGE MODEL

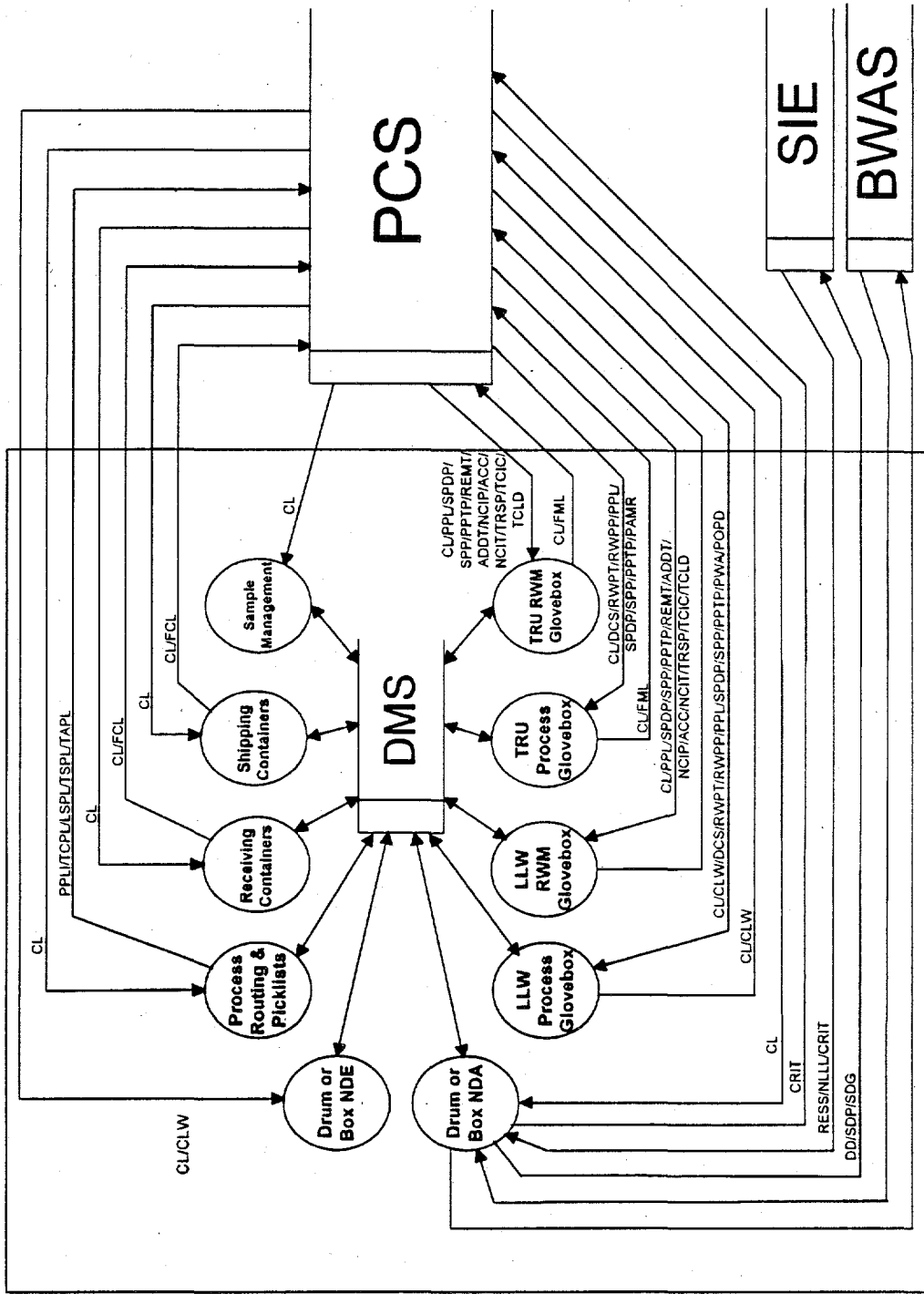


Figure F-5. PM-3.1.8 Waste Inventory Tracking and Container Relationships.