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WESTINGHOUSE IDAHO NUCLEAR COMPANY, INC.

HAZARDOUS CHEMICAL TRACKING SYSTEM

(HAZ-TRAC)

BY

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S. M. Ewart

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July 1990

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WESTINGHOUSE COMPUTER SYMPOSIUM
FOX CHAPEL YACHT CLUB
FOX CHAPEL, PENNSYLVANIA
OCTOBER 1990

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ABSTRACT

Westinghouse Idaho Nuclear Company, Inc. (WINCO) developed and implemented a computerized hazardous chemical tracking system, referred to as Haz-Trac, for use at the Idaho Chemical Processing Plant (ICPP). Haz-Trac is designed to provide a means to improve the accuracy and reliability of chemical information, which enhances the overall quality and safety of ICPP operations. The system tracks all chemicals and chemical components from the time they enter the ICPP until the chemical changes form, is used, or becomes a waste.

The system runs on a Hewlett-Packard (HP) 3000 Series 70 computer. The system is written in COBOL and uses VIEW/3000, TurboIMAGE/DBMS 3000, OMNIDEX, and SPEEDWARE. The HP 3000 may be accessed throughout the ICPP, and from remote locations, using data communication lines.

Haz-Trac went into production in October, 1989. Currently, over 1910 chemicals and chemical components are tracked on the system. More than 2500 personnel hours were saved during the first six months of operation. Cost savings have been realized by reducing the time needed to collect and compile reporting information, identifying and disposing of unneeded chemicals, and eliminating duplicate inventories. Haz-Trac maintains information required by the Superfund Amendment Reauthorization Act (SARA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Occupational Safety and Health Administration (OSHA).

Table of Contents

I. SUMMARY

Westinghouse Idaho Nuclear Company, Inc. (WINCO) developed and implemented a computerized hazardous chemical tracking system, referred to as Haz-Trac, for use at the Idaho Chemical Processing Plant (ICPP). Haz-Trac is designed to provide a means to improve the accuracy and reliability of chemical information, which enhances the overall quality and safety of ICPP operations. The system tracks all chemicals and chemical components from the time they enter the ICPP until the chemical changes form, is used, or becomes a waste.

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II. INTRODUCTION

Westinghouse Idaho Nuclear Company, Inc. (WINCO) is under contract with the Department of Energy (DOE) to operate the Idaho Chemical Processing Plant (ICPP), located in Eastern Idaho at the Idaho National Engineering Laboratory (INEL). The ICPP's primary purpose is to reprocess spent Naval reactor fuels to recover unused uranium.

The ICPP is responsible for the safe handling, storage, and use of all hazardous chemicals, and to protect it's personnel, the environment, and the local communities from potential health risk. WINCO continues to take the steps necessary to prevent any sudden or accidental chemical release to the environment; to reduce the possibility of fire or explosion; and to achieve regulatory compliance. Included in these steps, is a need to track chemicals found at the ICPP and to immediately update the constantly changing regulatory requirements, such as reportable quantities, waste characterizations, and safety and health hazards associated with chemicals.

An extensive search and review of regulatory reporting and chemical tracking software packages was begun in 1987. None of the packages encompassed the specialized needs to support a unique chemical processing facility such as the ICPP. Therefore, an in-house computerized hazardous chemical tracking system, referred to as Haz-Trac, was developed.

Haz-Trac runs on the ICPP's HP 3000 computer. Access to this computer is available throughout the facility and from remote locations using data communication lines. The system is written in COBOL and uses VIEW/3000, TurboIMAGE/DBMS 3000, OMNIDEX, and SPEEDWARE. OMNIDEX provides a method of partial key searches and fast data retrieval, while SPEEDWARE provides structured menu handling and a security system. The system currently has over 25 data sets, 150 files, and occupies more than 50 megabytes of disk space.

Haz-Trac is designed to track chemicals from the time they enter the ICPP until they change form, are used, or become a waste. Haz-Trac currently maintains detailed information for an inventory of over 1910 chemicals. The information supplied by this system supports the ICPP Emergency Control Center, as well as, many departments within WINCO by storing significant chemical data (refer to Appendix A.2 - A.6) that can be easily retrieved in a convenient format. Haz-Trac maintains complete reporting information for the Tier II Emergency and Hazardous Chemical Inventory portion of the Superfund Amendment Reauthorization Act (SARA) (refer to Appendix A.8). It provides information to determine if a chemical release exceeds the reportable quantity for SARA and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Haz-Trac also supplies information to achieve compliance with the Workers Right-to-Know section of the Occupational Safety and Health Administration (OSHA).

III. APPLICATION DESIGN

Chemical movement and storage is tracked from the time chemicals enter the ICPP until their final disposition is identified. Chemicals include chemical mixtures, construction chemicals, commercial chemicals, and chemical by-products. Those which are received by tanker trucks are referred to as bulk chemicals, while all others are referred to as packaged chemicals. Bulk chemicals are handled differently within Haz-Trac than packaged chemicals.

Currently there are four levels of access to the Haz-Trac system. They are the System Administrator, Environmental Compliance and Industrial Safety, Coordinator, and Read Only. Access is restricted through database passwords. System security and control of data access is centralized through a System Administrator. It is the System Administrator's responsibility to assign the access level for each user. Environmental Compliance and Industrial Safety access is used for entering pertinent information when notification is received about new or updated requirements. Responsibility for each chemical received is assigned to an individual known as the Coordinator. The Coordinator is responsible for entering information used in the tracking and reporting process. Read-Only access can be approved for any INEL personnel. Each access level receives a customized system menu (refer to Appendix B.3 - B.6).

Coordinators may only update chemicals assigned to them. Each coordinator may have an alternate to act in their behalf. Security within the Coordinator level depends upon the logon identification which is used to determine the chemical inventories a coordinator may update. The System Administrator uses the Coordinator Master Screen (refer to Appendix B.2) to maintain information about chemical coordinators and designated alternates. All coordinator entered transactions are verified against this information.

Chemical information is entered and maintained in Haz-Trac through the Master Chemical Screen (refer to Appendix B.7). The components for a chemical mixture are maintained on the Chemical Component Screen (refer to Appendix B.8). Only the System Administrator has access to add or update chemicals. This ensures that correct information about a chemical is being entered into the database. Haz-Trac provides a reference for chemicals to be validated as pre-approved to be brought on site, prior to them being procured.

Specific information, such as concentration, container type, unit of measure, etc., which is unique to particular chemical receipt may be pre-defined using a Stock Number. This information is maintained using the Stock Number Screen (refer to Appendix B.9).

III. APPLICATION DESIGN (continued)

Multiple keys are used to retrieve chemical information throughout this system. Chemical information may be accessed by using the Chemical Abstract Service (CAS) number, the proper chemical name or a portion of the name, the common chemical name, or the assigned chemical formula when using the Chemical Master Screen. On the remaining screens, a partial key search on chemical name, the CAS number, or a stock number may be used to access chemical information.

An alphabetic list of chemicals pre-approved for use at the ICPP is displayed on the Chemical List Screen (refer to Appendix B.10). A chemical name may be selected on this screen and carried to other screens throughout the system.

When a package chemical is delivered to the ICPP, the Package Chemical Receipt Screen (refer to Appendix B.11) is used to enter the chemical receipt information. It is used by receiving warehouse personnel or specific chemical coordinators. A unique tracking number is assigned in Haz-Trac to each chemical receipt.

The most commonly used screen in Haz-Trac is the Package Chemical Inventory Screen (refer to Appendix B.12). It displays all package chemicals at the ICPP. Chemicals which have not been approved by their coordinator are denoted with an asterisk and may not be used. This screen allows access to several other portions of the system, including package transfers and package issues.

Coordinators may transfer chemicals from their current location to another within the ICPP. Production Department personnel must record these transfers on hand written transfer and makeup data sheets and Technical Department personnel must record them in their laboratory logbooks. The Package Transfer and Approval Screen (refer to Appendix B.13) is used to record this information in Haz-Trac. Coordinators may only transfer chemicals assigned to them. Receiving coordinators must approve each transfer before the chemical is available for use. This approval process requires coordinators to review the information for accuracy and accept or reject the transaction. If the transaction is rejected, responsibility of the chemical returns to the sending coordinator. The sending coordinator must correct the information and resubmit the transaction.

To remove a chemical from inventory, the Package Chemical Issue Screen (refer to Appendix B.14) is used. At this point, the chemical is assigned a final disposition. A final disposition is needed when chemicals change form, are used, become waste, or are removed from the ICPP. This information is used for the SARA 313 - Toxic Release Report (refer to Appendix A.9). As with transfers, chemical coordinators may only issue chemicals assigned to them.

Chemicals may be transferred or issued in varying units of measure. If the unit of measure stored in inventory does not match the unit on the transaction, the quantity is electronically converted to the smaller unit before any updating is done. All quantities are converted to pounds for SARA reporting purposes and for display on the Chemical Master Screen.

Bulk chemicals, received in tanker trucks, are stored in vessels at the ICPP. The way the system tracks these chemicals is by the vessel it is stored in, and is similar to the tracking of packaged chemicals. The Vessel Master Screen (refer to Appendix B.15) maintains information about the vessels at the ICPP. Vessels include storage vessels, containing pure, liquid chemicals; makeup vessels and feed vessels, containing combinations of chemicals; and waste vessels and process waste vessels, containing chemical waste.

Pure, liquid chemicals that are brought into the ICPP in bulk tanker trucks and transferred into assigned storage vessels are recorded using the Storage Vessel Receipt Screen (refer to Appendix B.16).

There are two different types of transfers involving vessels. The Vessel to Vessel Transfer Screen (refer to Appendix B.17) records transfers from storage vessels into makeup vessels, feed vessels, waste vessels, and process waste vessels. The Vessel to Container Transfer Screen (refer to Appendix B.18) records chemicals transferred from storage vessels to package chemical container types.

The level of chemicals within selected storage vessels is logged by the Operation coordinator on a daily basis using the Daily Storage Vessel Inventory Screen (refer to Appendix B.19). The comparison of levels provides the ability to detect possible leakage in the vessels by dramatic decreases in volumes when no transfers have been made.

The environmental and safety information for each chemical is maintained using the Environmental and Safety Codes Screen (refer to Appendix B.20). This information is necessary for WINCO to remain in compliance with the reporting requirements under SARA and CERCLA. Reports are generated using the data stored within Haz-Trac. Most reports have multiple selection criteria available. Currently, there are 17 reports available for use (refer to Appendix C).

On-line help is available for designated fields (refer to Appendix A.7) throughout the system. These help fields are identified with an asterisk on the various screens. To use the help function, a "?" is entered in the desired field, and the function key labeled "HELP" is pressed. After viewing the help information, the program automatically returns you to the field on which help was requested. Information that is supplied for this help is maintained on the Help Update Screen (refer to Appendix B.21). The help information is also used to perform field verification during data entry.

IV. RESULTS

Haz-Trac greatly enhances WINCO's ability to comply with specific SARA and CERCLA regulatory reporting requirements. With the continually increasing number of regulations, accurate and reliable data would have been infeasible without Haz-Trac.

This application provides a method for inventory control and waste minimization. This is accomplished through the reduction of inventories, the elimination of duplicate chemicals, and the validation of chemicals which are approved for use at the ICPP prior to procurement. Accurate and timely information is available to all personnel on the health, safety and environmental considerations for each chemical found at the ICPP. The quality and safety of ICPP operations has been enhanced through the use of this system.

V. PROPOSED ENHANCEMENTS

The following is a list of the enhancements which are currently being discussed for possible implementation onto the Haz-Trac system:

- Tracking of Toxic Releases
- Creating EPA report forms electronically
- Accessing Material Safety Data Sheets (MSDS) electronically
- Using Bar Codes
- Archiving historical data
- Mailing reports electronically to selected individuals
- Automating the chemical procurement process
- Grid plotting locations of chemicals for use by the Emergency Response Team
- Increasing the information available on reports
- Displaying reports on-line

Appendix A - Tables

HAZ-TRAC DATA FIELDS

The following information is being maintained for the chemicals and chemical transactions entered into Haz-Trac:

ALTERNATE	Initials of the coordinator's alternate if the regular coordinator is not available.
AMOUNT	Amount in decimal format of a particular transaction involving usage of a chemical.
APPENDIX-3	Code used for SARA reporting identifying if a chemical can be found in reference manual Appendix-3.
APPENDIX-8	Code used for SARA reporting identifying if a chemical can be found in reference manual Appendix-8.
APPENDIX-9	Code used for SARA reporting identifying if a chemical can be found in reference manual Appendix-9.
APPROVAL	Initials of the coordinator who is approving a receipt or transfer of a chemical.
BEG-YR-QTY	Quantity used in calculating the average daily quantity by rolling over the total quantity available at the end of the previous year.
CALIF-LIST	Indicator stating whether or not the chemical is found on the California List for the SARA report.
CAS	Chemical Abstract Number assigned to a chemical by the American Chemical Association for unique identification. Alpha characters allowed in first 6 positions only.
CERCLA-FINAL	Indicates the final reportable quantity for the SARA report according to CERCLA regulations.
CERCLA-STAT	Indicates a standard default reportable quantity for the SARA report that is used until a final reportable quantity can be established.
CHEMICAL-NAME	Technical name of the chemical.
COMMENT	Comment line for each data or input screen for user notes.

COMMON	Common name of a chemical assigned by the user.
COMPAT-GRP	A field to indicate a group that a particular chemical fits into according to it's compatibility in use with other chemicals.
COMPONENT-CAS	A Cas Number used in a mixed chemical to make up the mixed chemical.
CONST-CODE	A code used to track chemicals brought into the ICPP by construction companies.
CONTAINER-SIZE	A number to indicate the size of a container at package chemical receipt time.
CONTAINERS	A number to indicate how many containers of packaged chemicals were received.
COORD-FROM	Initials of the person from whom the chemical was transferred.
COORDINATOR	Initials of the person responsible for maintenance of a chemical.
DATE	General date field used in different data sets.
DENSITY	Weight of a chemical in kilograms per liter - used for conversion to pounds.
DOT-REQ	Department of Transportation safety requirements.
DRUM-NO	Identification number of a drum containing chemicals, assigned locally.
END-LOCATION	Location code to show where a chemical was disposed of.
EPA-CD	A 1 digit code indicating type of hazardous condition. Holds up to 8 codes.
EXPIRE-DATE	Expiration date of a chemical.
FORMULA	Chemical formula.
GOVMT-ID	The government property tag number.
GROSS-WT	Weight of a chemical with or without the container before use.

HAZ-TRAC DATA FIELDS (continued)

HAZARD-CATS	Field containing up to 8 categories listing hazards associated with chemicals.
ISM-CODES	Internal Skin Measurement codes.
LAND-BAN	One character code indication if a chemical can or cannot be used as waste in landfills.
LEVEL	Indicates current level of a particular vessel.
LOCATION	The location where a chemical is stored either in a building and room or outside location.
LOT	Manufacturers lot number or batch number of a chemical.
MANUFACTURER	The manufacturer name of the chemicals.
MOL-WT	Molecular weight of a chemical used in conversion to pounds.
MOLAR	Molarity of a chemical in grams per liter.
ORGANIC-CODE	Indicates if a chemical is an organic or inorganic compound.
PH	Value to represent the acidity or alkalinity of a chemical for informational purposes.
PHYS-FORM	Physical form of a chemical ie, solid, liquid, gas.
PO	Purchase order number used to purchase a chemical.
POTASSIUM	The potassium content in grams per pound.
PRESSURE-IND	Indicates level of pressure which the chemical can be stored.
PROCESS	Name of the process in which the chemical was issued for use.
PURE-MIX	Code to indicate if the chemical is pure or mixed.

HAZ-TRAC DATA FIELDS (continued)

RCRA-HAZ-WC-1	RCRA code indicating type of hazardous waste.
RCRA-HAZ-WC-2	RCRA code indicating type of hazardous waste.
RCRA-HAZ-WC-3	RCRA code indicating type of hazardous waste.
RCRA-HAZ-WC-4	RCRA code indicating type of hazardous waste.
REQUESTOR	Name of the person requesting the chemical when purchased.
RTK-CD	Workers Right-to-Know Health and Safety codes for hazardous chemicals.
SARA-HAZ-CD-1	Indicates SARA hazardous code associated with chemical.
SARA-HAZ-CD-2	Indicates SARA hazardous code associated with chemical.
SARA-HAZ-CD-3	Indicates SARA hazardous code associated with chemical.
SARA-FINAL	Indicates the final reportable quantity for the SARA report according to SARA regulations.
SARA-STAT	Indicates a standard default reportable quantity for the SARA report that is used until a final reportable quantity can be established.
SOURCE-CD-1	Source code indicating a chemical is being used in the Technical Department.
SOURCE-CD-2	Source code indicating a chemical is being used in the Analytical Department.
SOURCE-CD-3	Source code indicating a chemical is being used in the Production Department.
SODIUM	Sodium content of a chemical in grams per pound.
SPCC-1	Spill prevention code.
SPCC-2	Spill prevention code.
SPCC-3	Spill prevention code.
STOCK-NO	Assigned to chemical for retrieval of information and for procurement reporting.

HAZ-TRAC DATA FIELDS (continued)

STORAGE-IND	Indicates the temperature in which a particular chemical can be stored.
TARE-WT	Weight of chemical and container after use. Subtract from gross wt to get transfer or issue qty.
TRACKING-NO	A number assigned at the receipt of a chemical that remains associated with the chemical until issue time.
TYPE-CONTAINER	Code for Chemical container type, (see tables).
UN-NA	United Nations number for chemical identification.
UNIT-MEAS	The unit of measure for a chemical, ie. gallons, pounds, kilograms, etc.
VESSEL-ID	Identification or commonly used number for a vessel.
VESSEL-DOORS	Indicates if vessel is stored indoors or outdoors.
VESSEL-GROUND	Indicates if vessel is stored above or below ground.
VESSEL-TYPE	Indicates if a vessel is a storage, makeup, feed or waste vessel.
VOLUME	Operating volume of a particular vessel.
WT-PCT	Percent of chemical in a solution used in calculating pounds.
YEAR	The year a chemical was used or received.

HAZ-TRAC HELP FIELDS

The following fields contain on-line help information available on the various screens throughout the system:

FIELD	DESCRIPTION
Right-To-Know (RTK)	Emergency health, fire, and instability codes
Spill Prevention, Control, and Counter Measures (SPCC)	To describe measures that must be taken to prevent, control, and handle spills
Industrial Safety Manual (ISM)	ICPP Chemical Toxicity Classification Guide
Unit of Measure	Industry standards
Type of Container	EPA container codes
Physical Form	EPA Codes - (S)olids - (L)iquid - (G)as
Coordinator	3 digit user Logon-ID
Final Disposition Code	WINCO assigned in-plant codes
Process	WINCO assigned in-plant codes

SARA

Tier II Emergency and Hazardous Chemical Inventory
Reporting Requirements
(311 & 312 Report)

The following information is extracted from Haz-Trac for each chemical and is reported on the SARA 311 and SARA 312 reports:

- Chemical Abstract Service (CAS) Number
- Chemical Name
- Physical Form
- Physical and Health Hazards
- Maximum Daily Amount
- Average Daily Amount
- Number of Days On-Site
- Storage Locations
- Types of Storage Containers
- Storage Pressure
- Storage Temperature

SARA

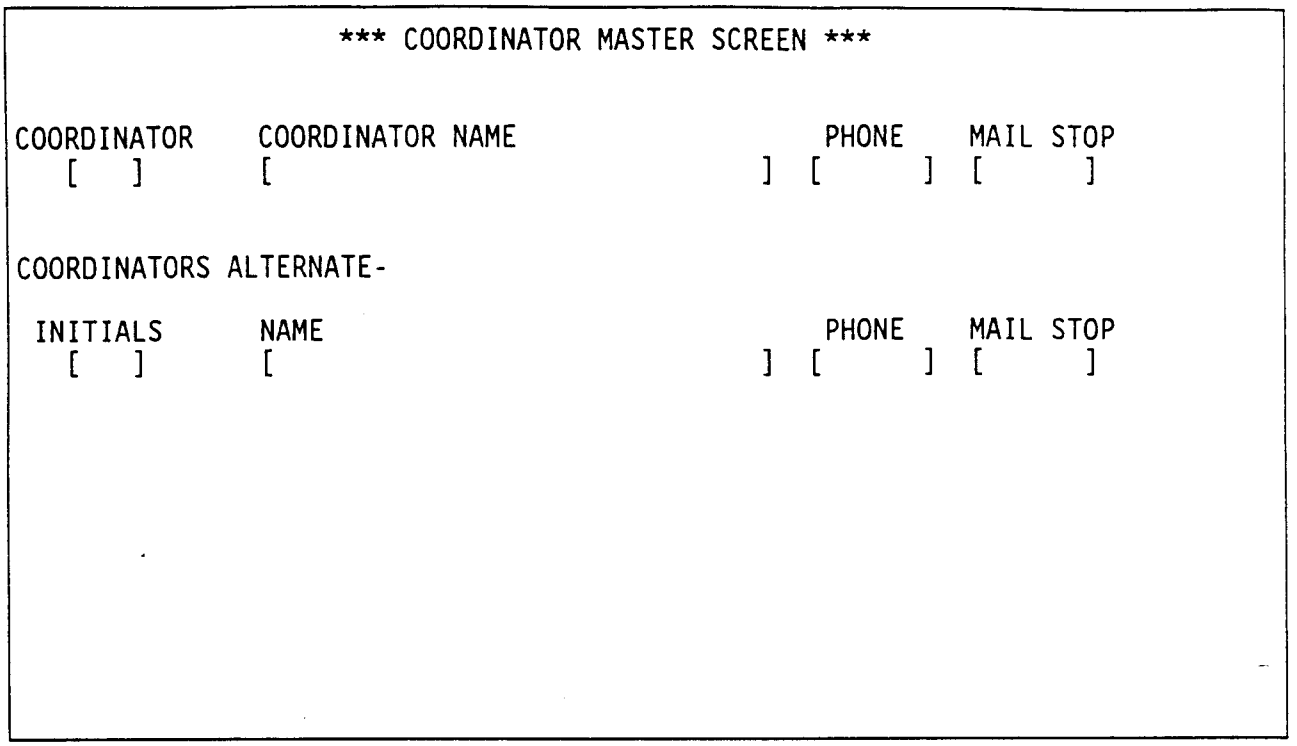
EPA Form R
Toxic Chemical Reporting Requirements
(313 Report)

The following information is what Haz-Trac needs to maintain for each chemical to complete the SARA 313 report:

- Chemical Abstract Service (CAS) Number
- Chemical Name or Category (including all mixtures and byproducts)
- Use of the Chemical at the Facility
- Maximum Amount On-site any Time During the Calendar Year
- Fugitive or Non-point Air Emissions
- Stack or Point Air Emissions
- Discharges to Water
- Releases to Landfill
- Releases to Land Treatment
- Releases to Surface Impoundment (to be closed as a Landfill)
- Disposal/Releases to Off-site Location
- Waste Treatment Methods and Efficiency
  - Waste streams
  - Range of influent concentration
  - Sequential treatment
- Bases for Estimates

Appendix B - Screens

Page



Function Key Labels:

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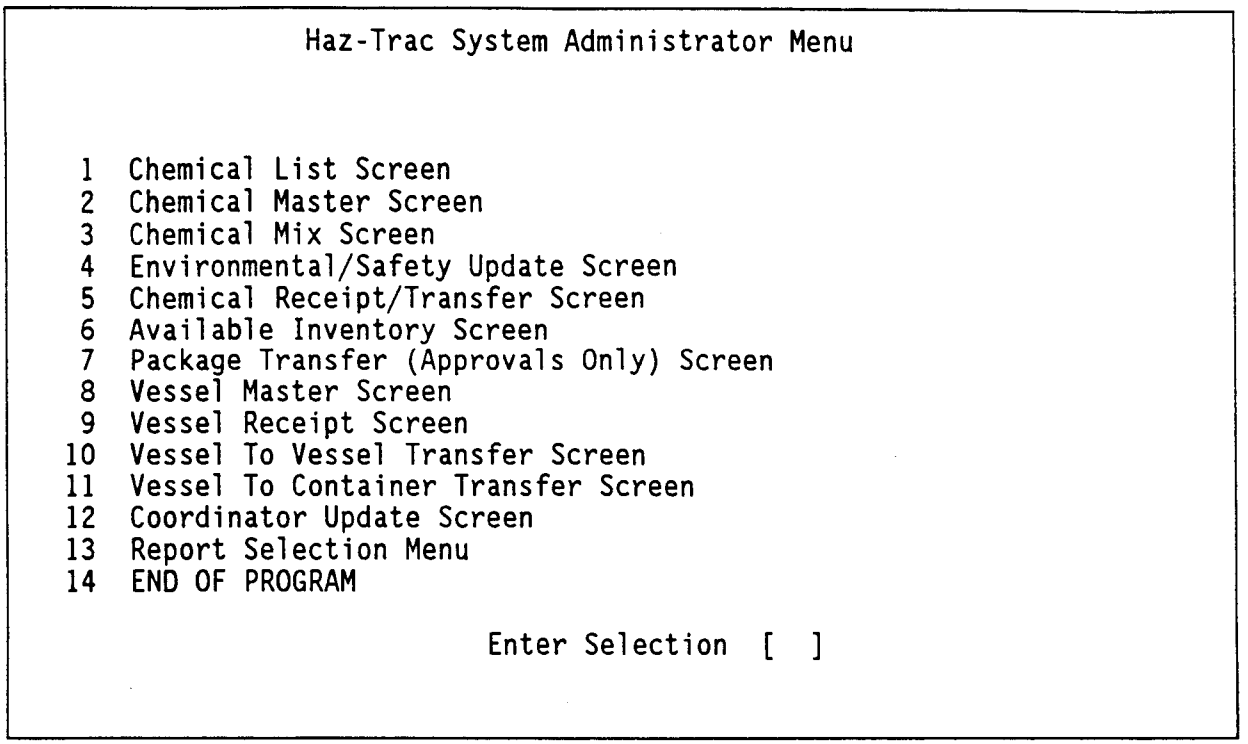

Function Key Labels:

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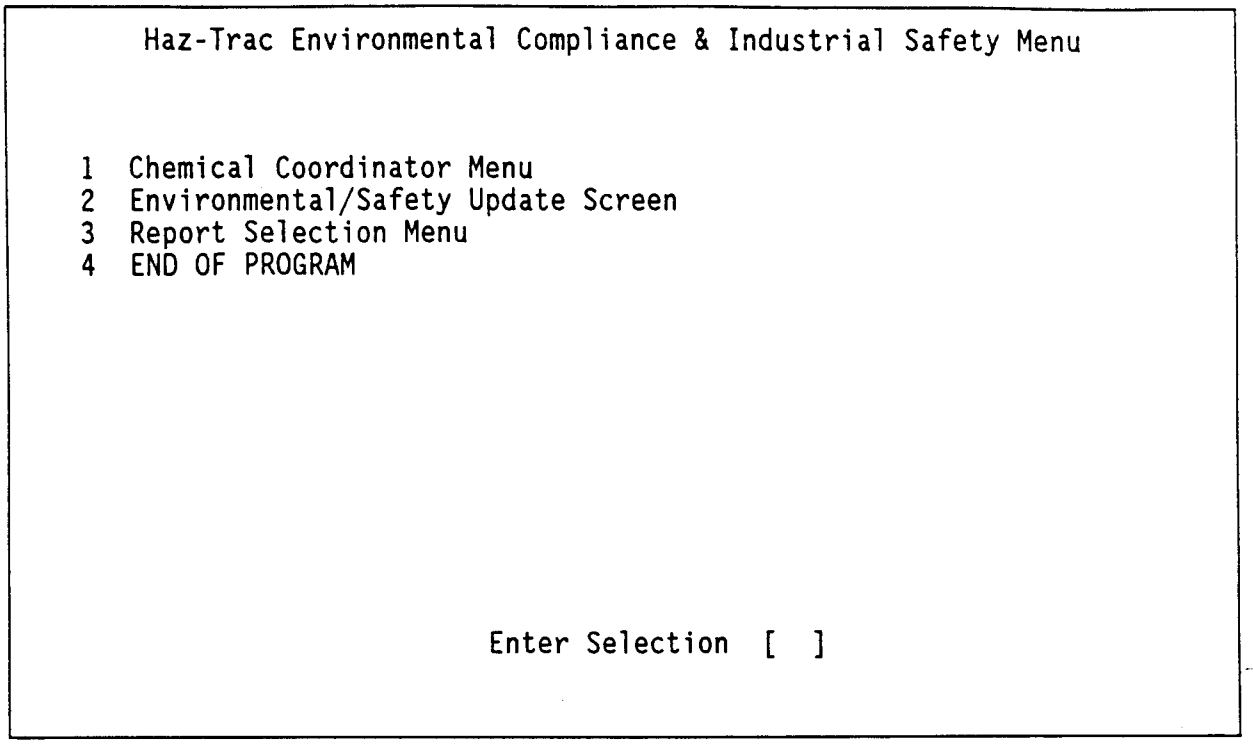

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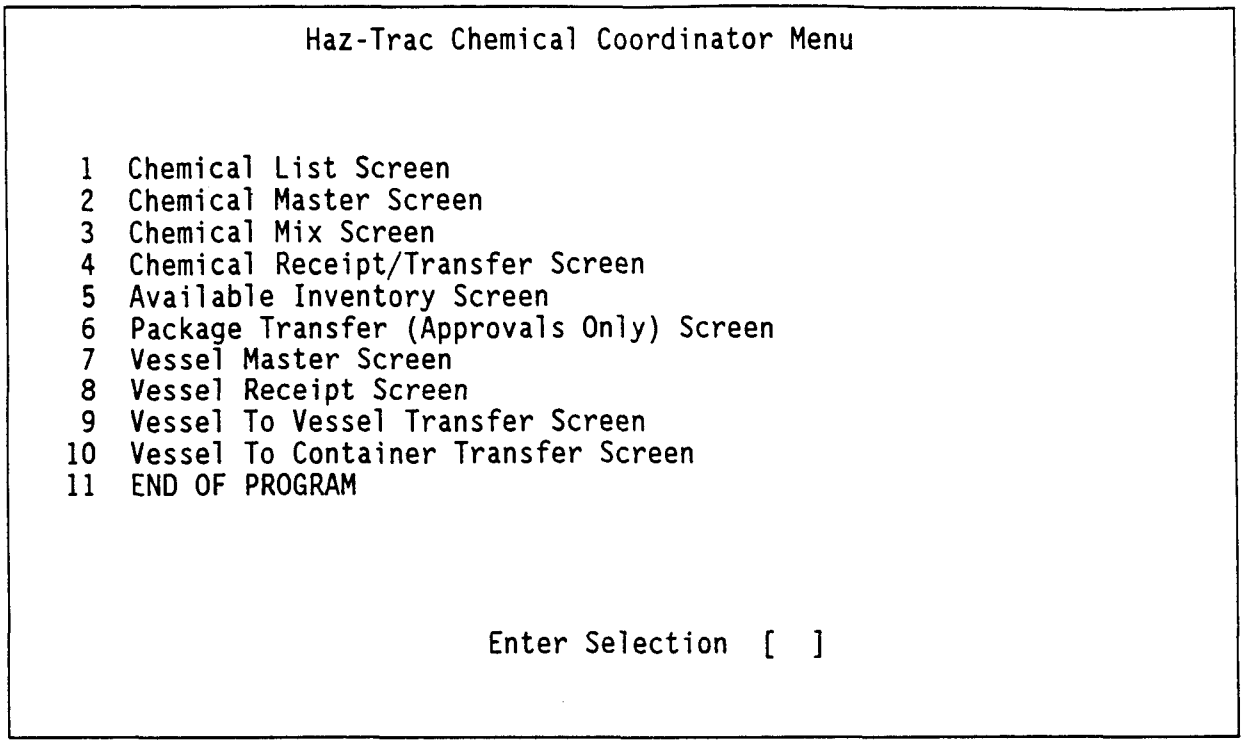
COORD MENU	ENV/SAFE UPDATE	REPORT MENU					



Function Key Labels:

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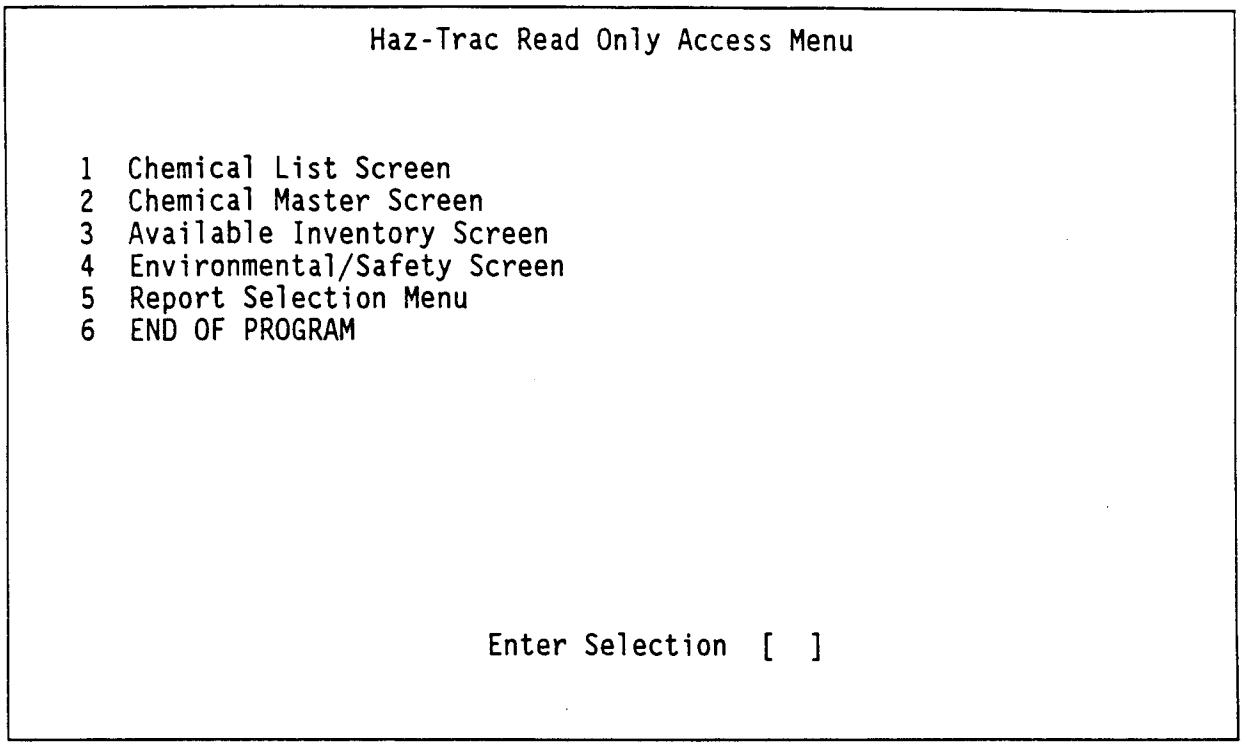

Function Key Labels:

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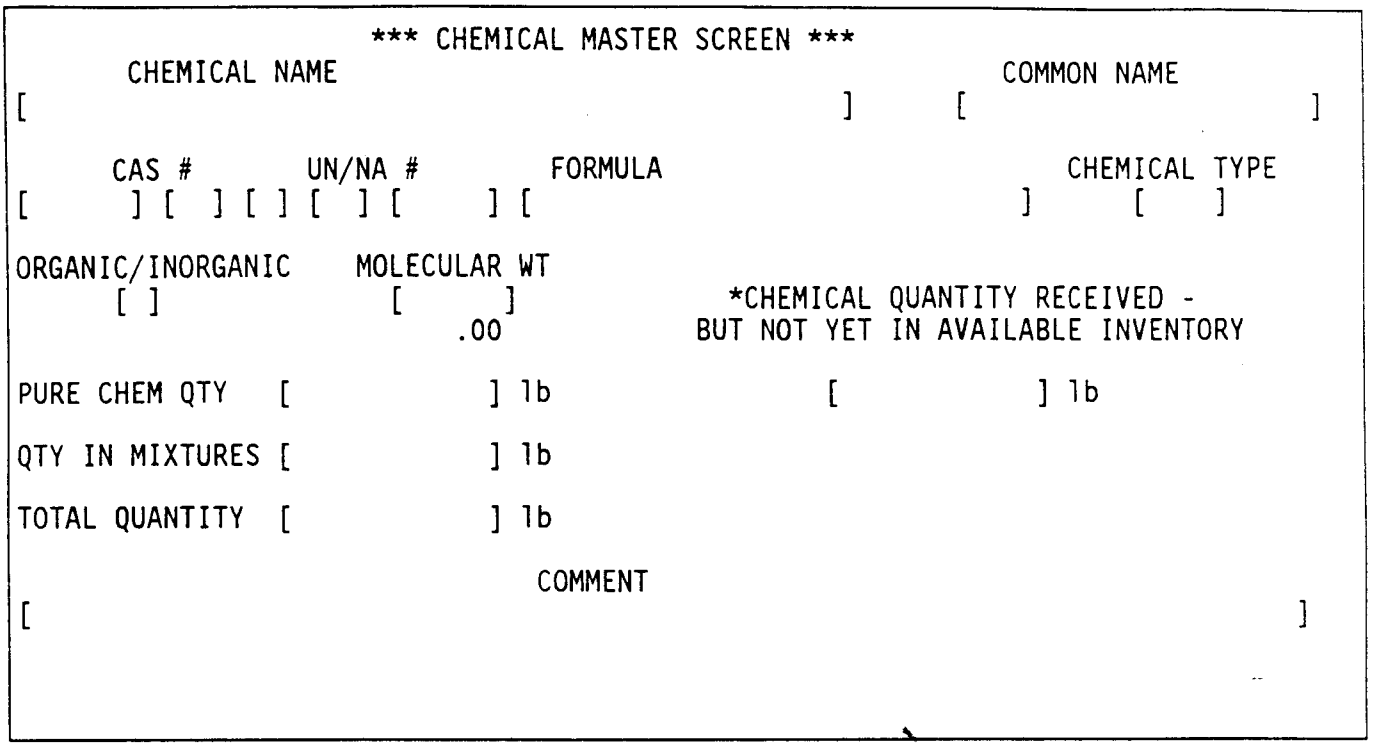
CHEMICAL LIST	CHEMICAL MASTER	AVAIL INVEN	ENV/SAFE INFO	REPORT MENU			



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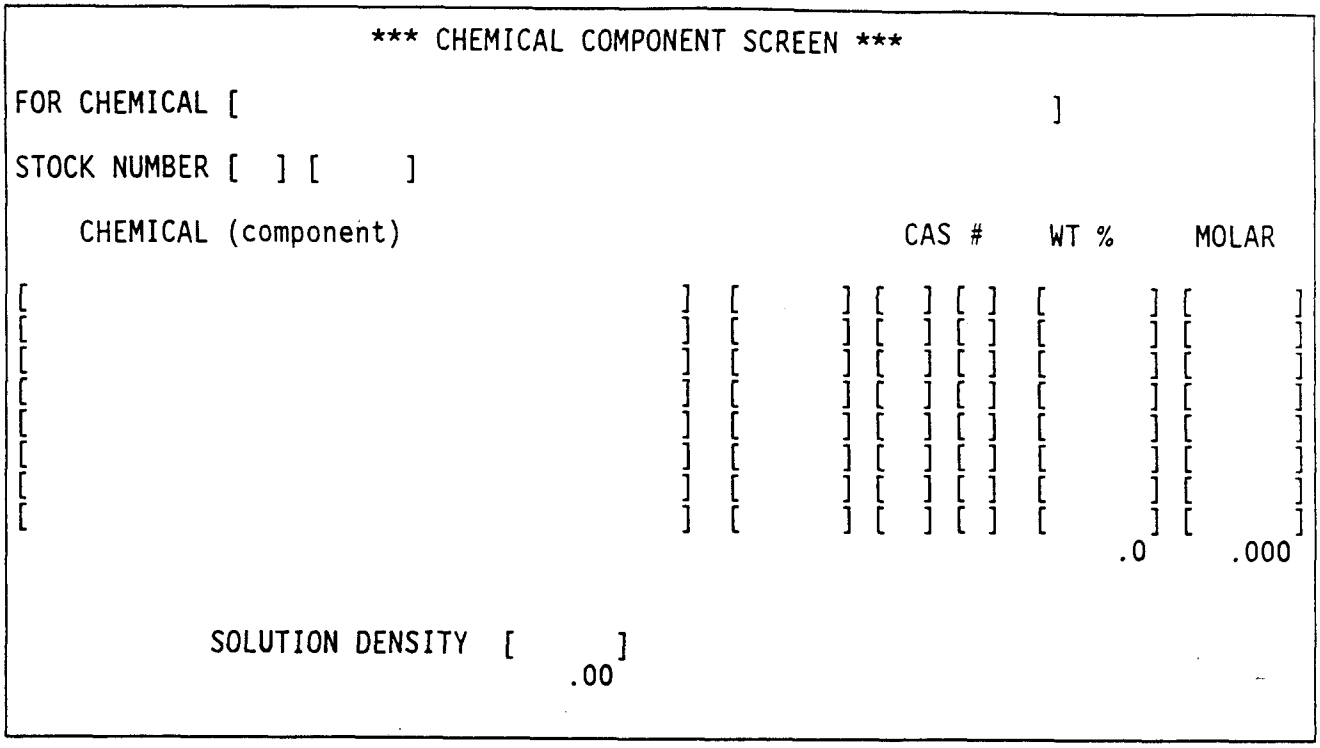
STOCK NUMBER	UPDATE		PRINT SCREEN	PACKAGE RECEIPTS		ENV/SAFE CODES	MORE AREAS
PRINT SCREEN	UPDATE	AVAIL INVEN	CHEMICAL MIX				MORE AREAS



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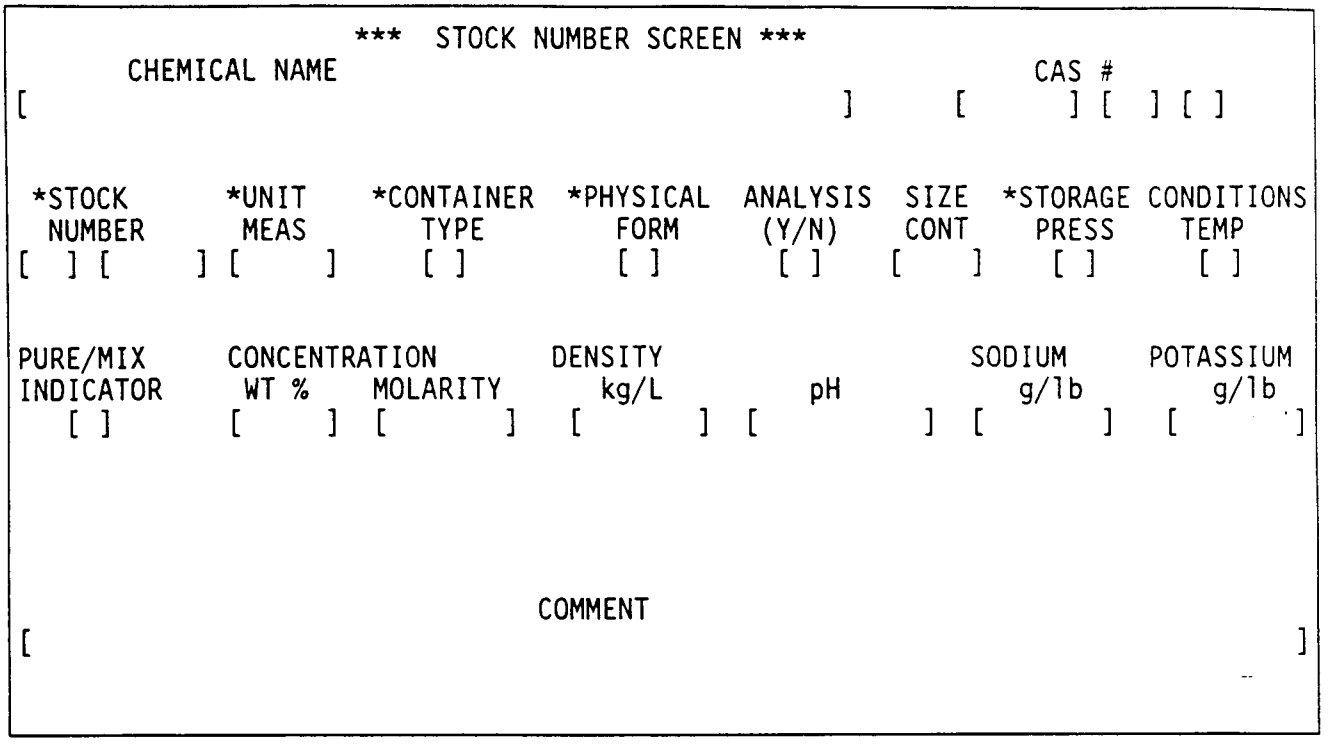

Function Key Labels:

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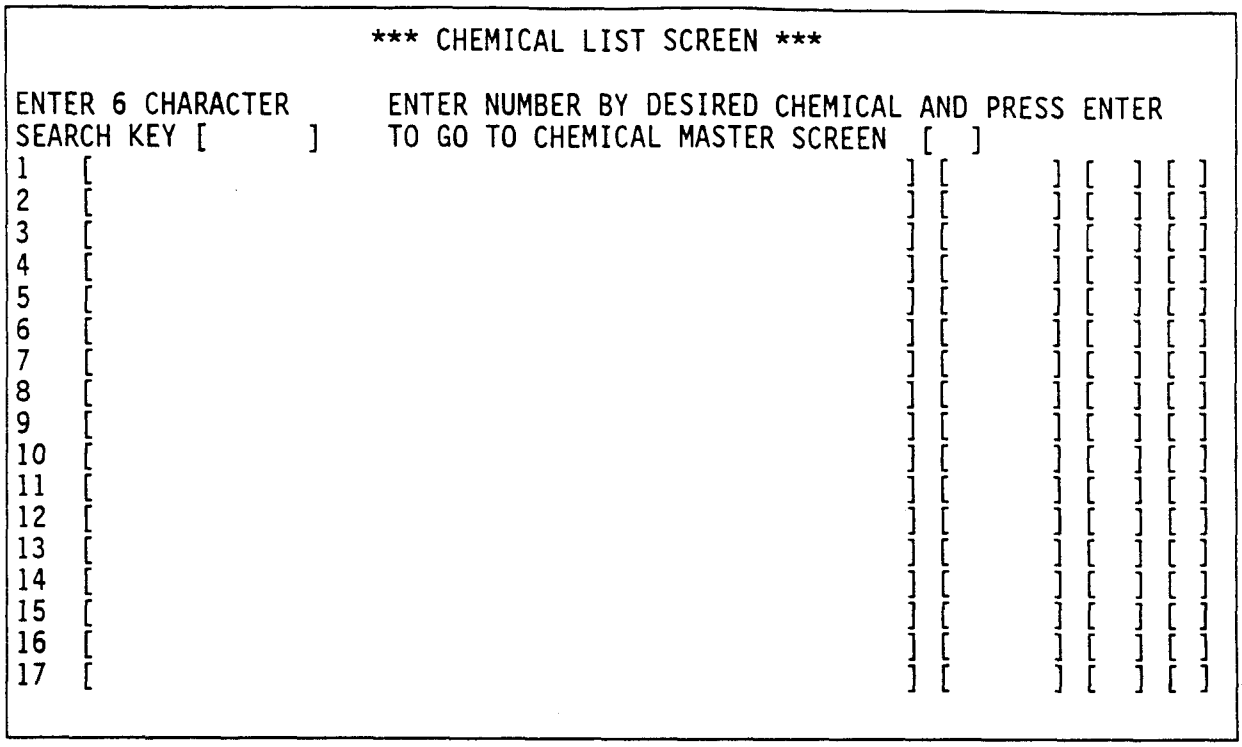
PRINT SCREEN	UPDATE	ADD ENTRY	CHEMICAL MIX	CHEMICAL MASTER	READ NEXT	READ PRIOR	MORE AREAS
PRINT SCREEN	ENV/SAFE CODES	HELP SCREEN	AVAIL INVEN				MORE AREAS



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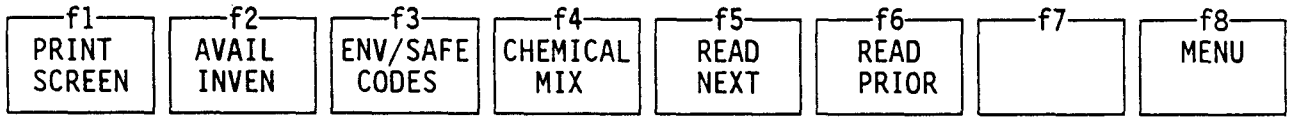
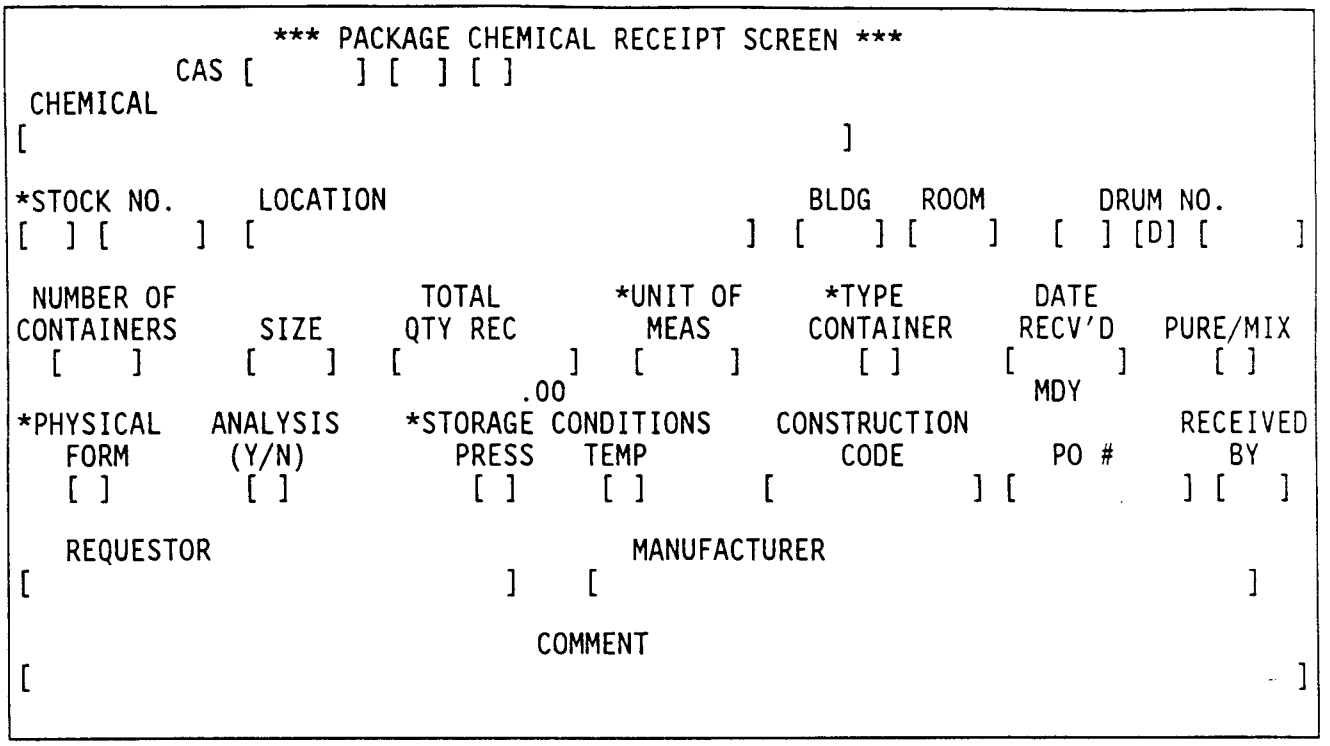
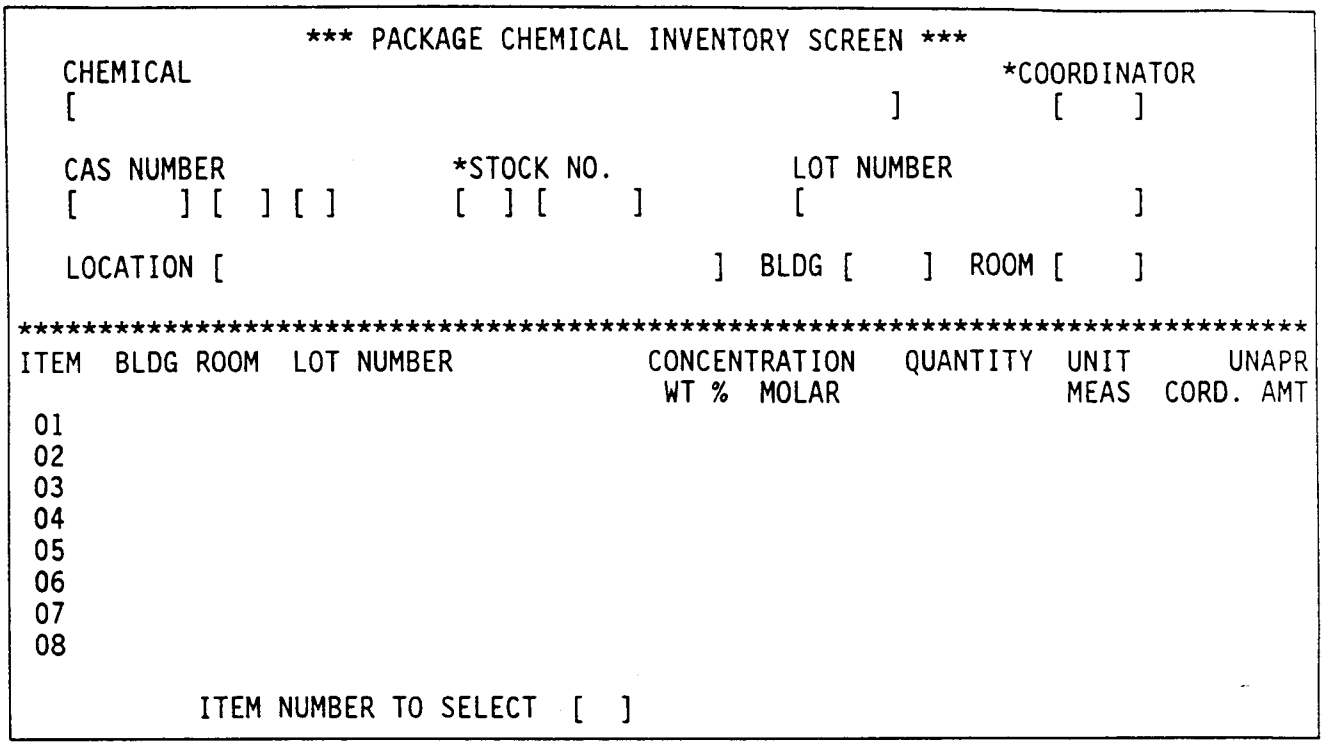




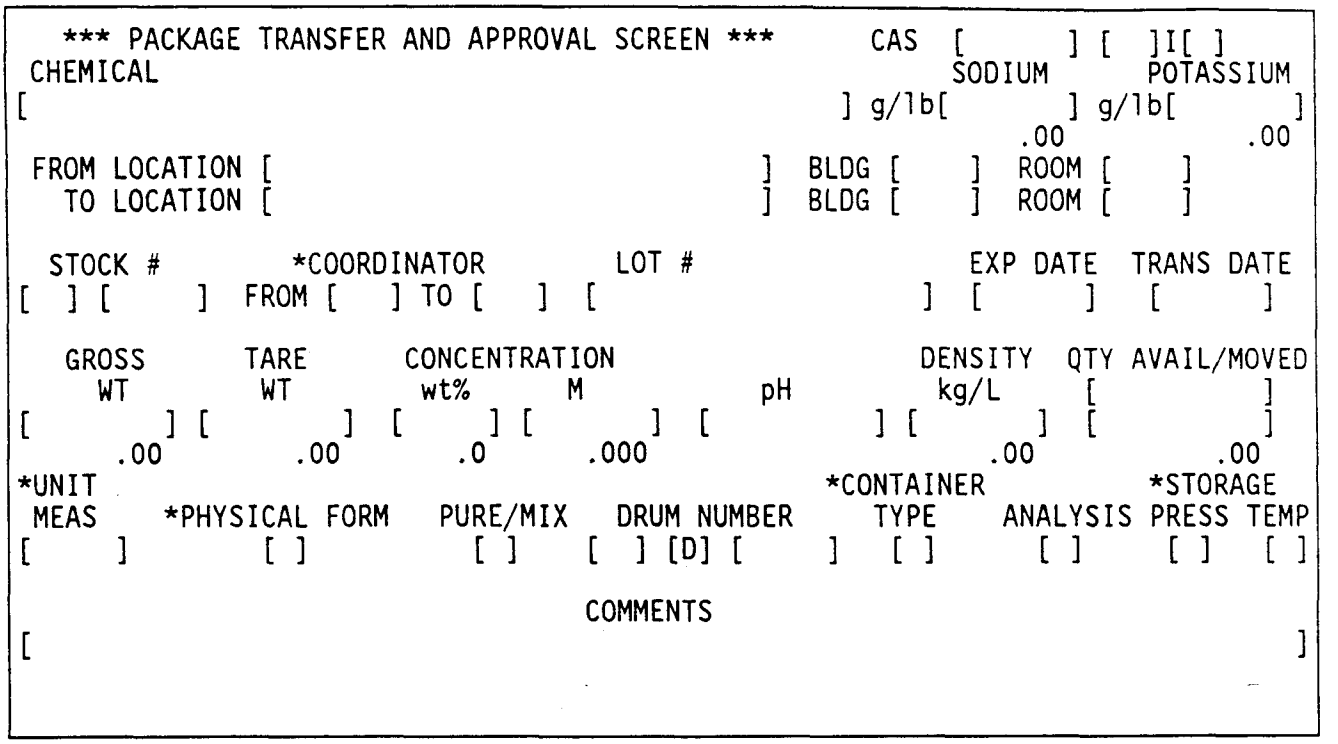
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	ENV/SAFE CODES	APPROVAL	MORE AREAS	MENU
PRINT SCREEN	CHEMICAL MIX	AVAIL INVEN	STOCK NUMBER			MENU	MORE AREAS



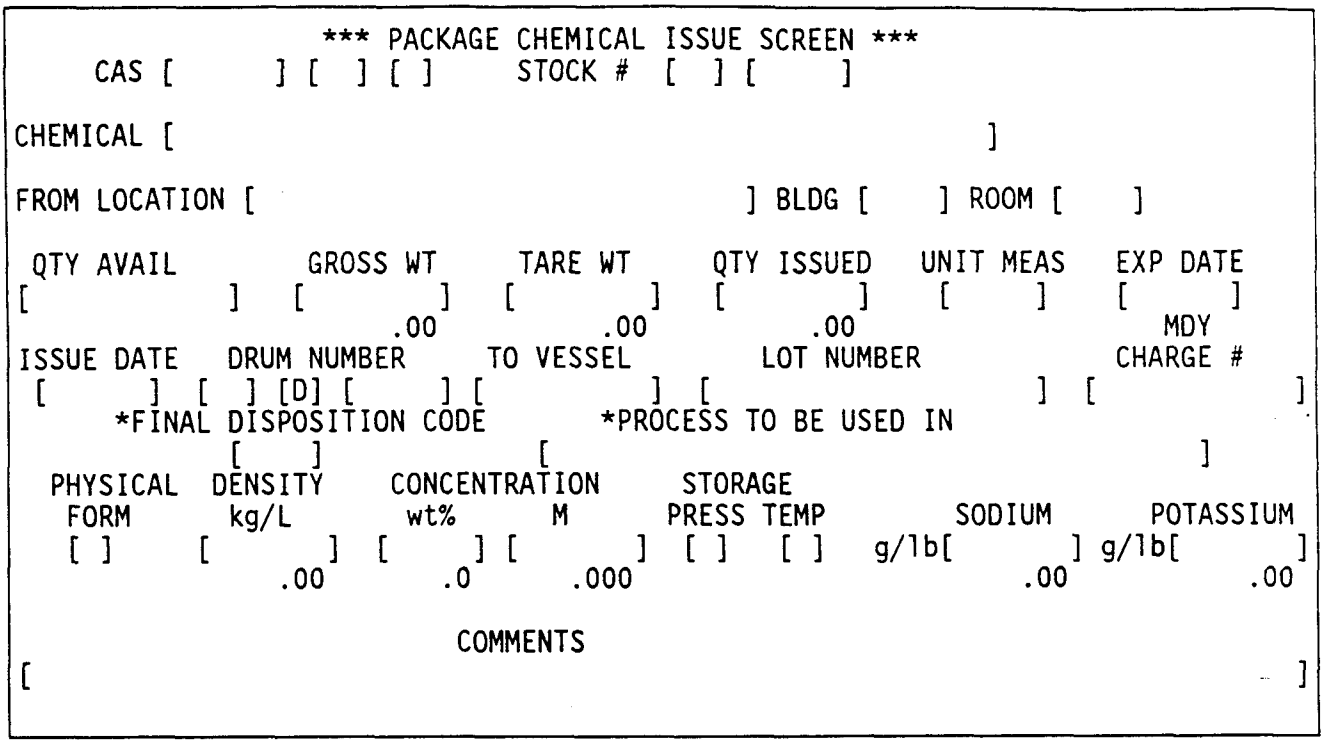
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	PACKAGE TRANSFER	HELP SCREEN	CLEAR SCREEN	PACKAGE ISSUES	READ NEXT	READ PRIOR	MORE AREAS
APPROVAL SCREEN	CHEMICAL MIX		ENV/SAFE CODES	CHEMICAL MASTER	STOCK NUMBER	MENU	MORE AREAS



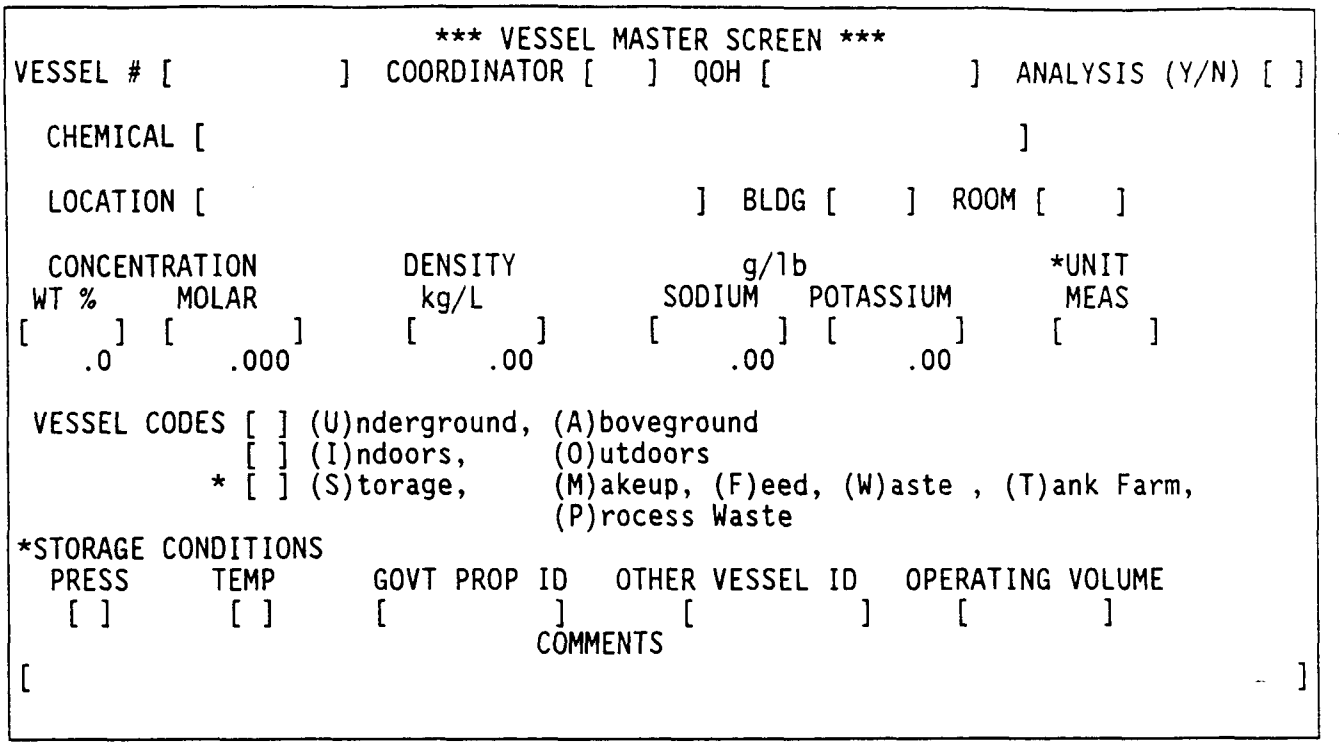
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	ENV/SAFE CODES	CHEMICAL MIX		DONE



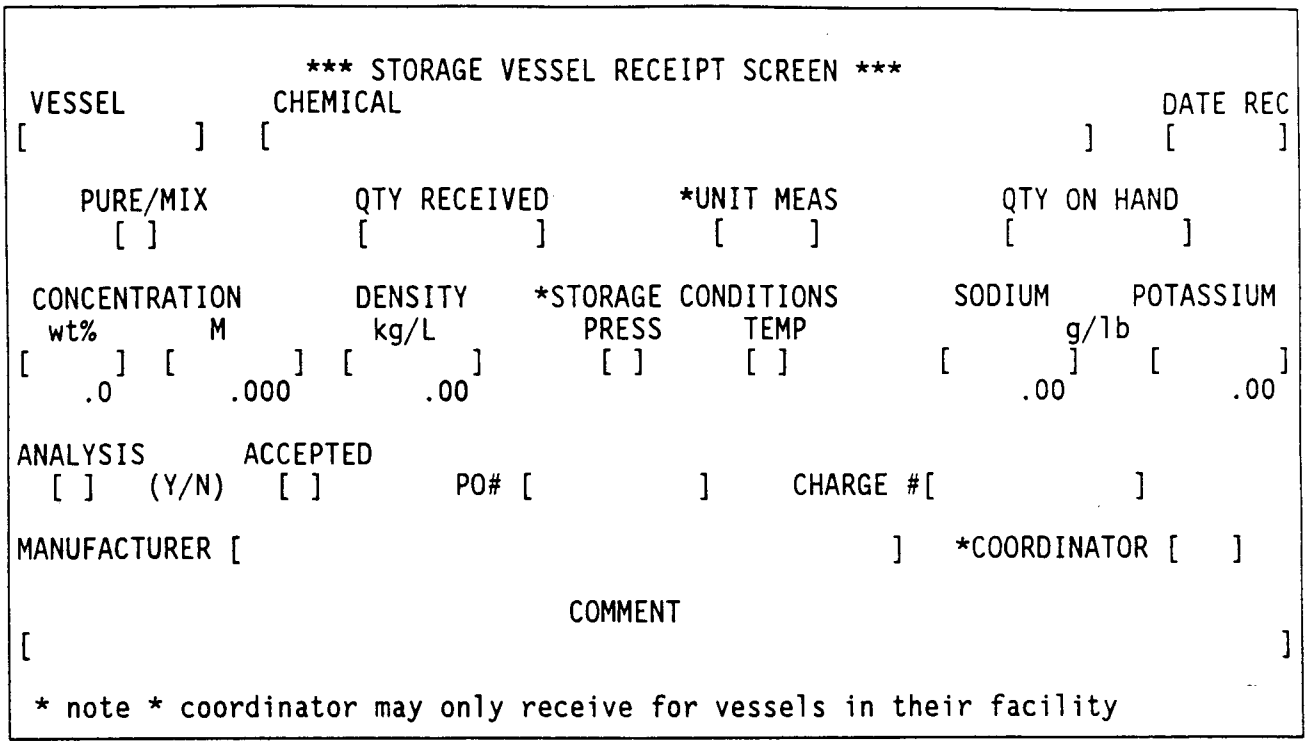
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	ENV/SAFE CODES	CHEMICAL MIX	VESSEL MASTER	DONE



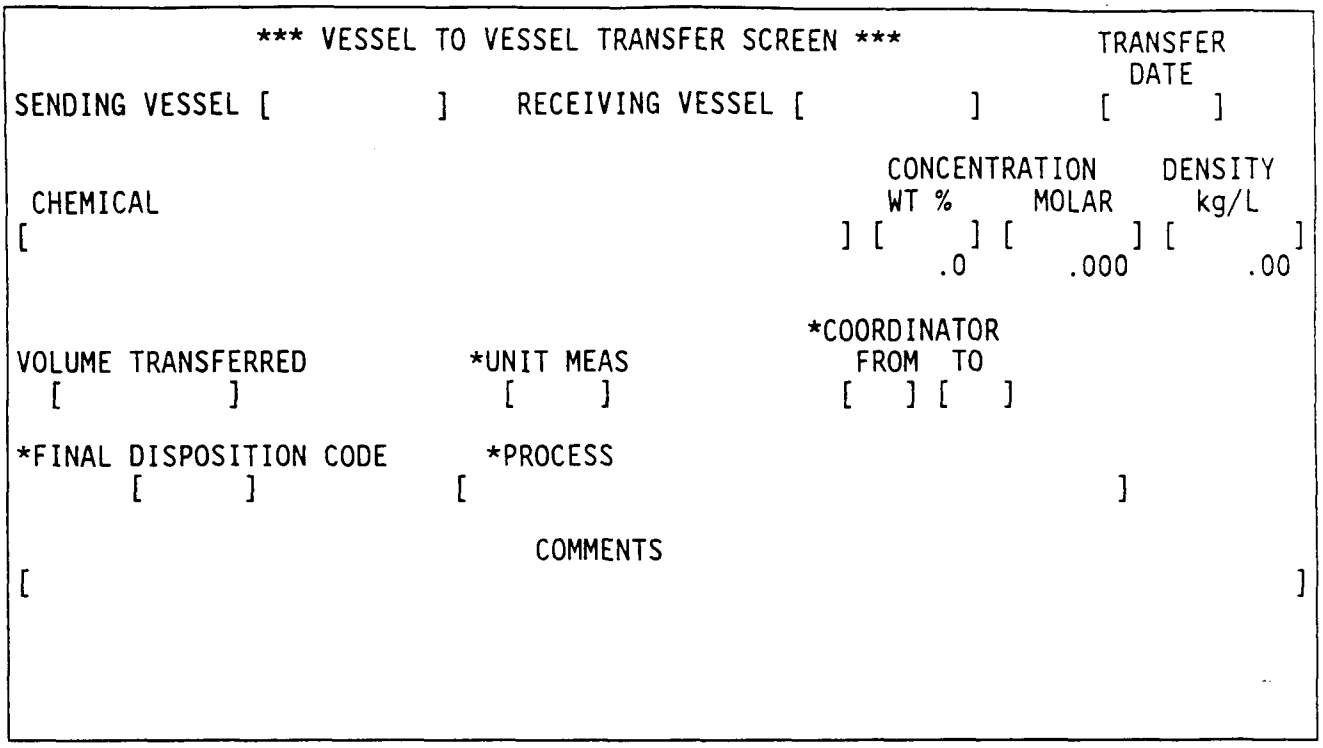
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	VESSEL RECEIPTS	VESLVESL TRANSFER	MORE AREAS	MENU
VESSELTO CONTAINR	ENV/SAFE CODES						MORE AREAS



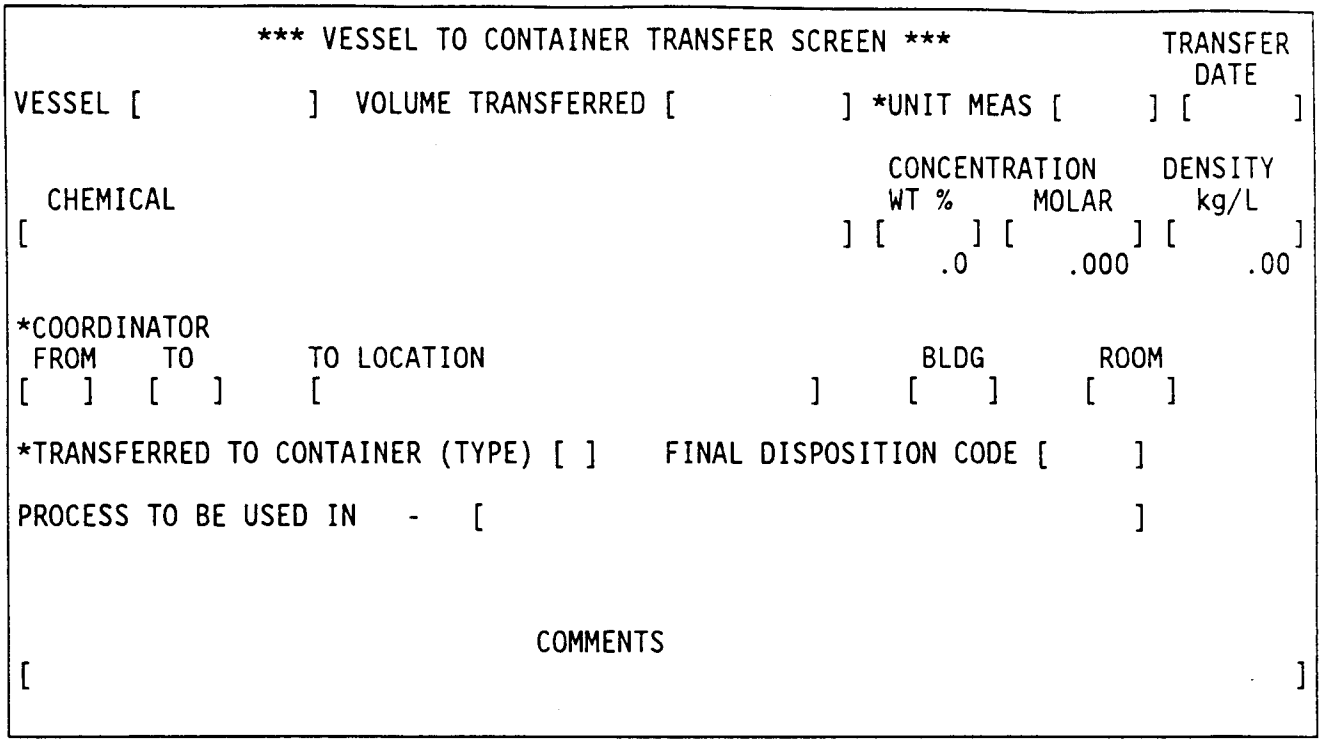
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	READ NEXT	READ PRIOR	MORE AREAS	MENU
VESLVESL TRANSFER	ENV/SAFE CODES						MORE AREAS



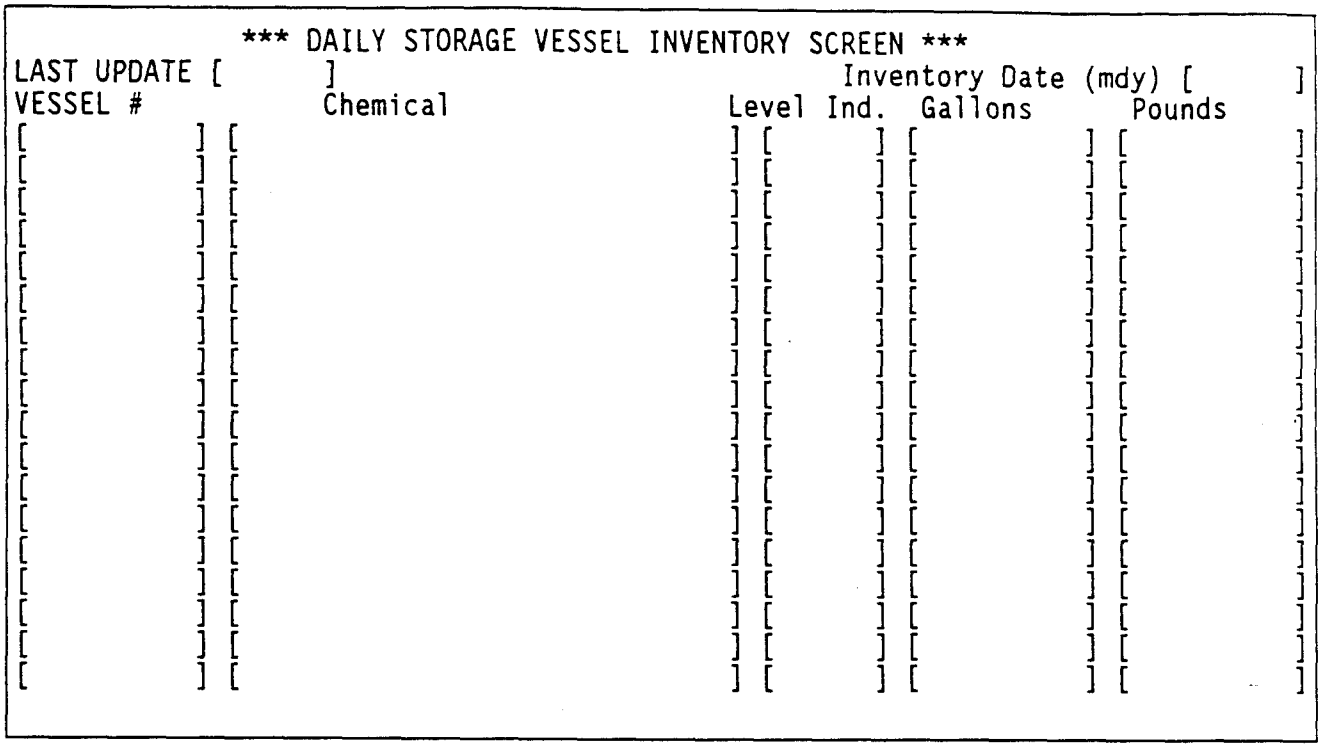
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	READ NEXT	READ PRIOR	MORE AREAS	MENU
ENV/SAFE CODES	VESSEL MASTER	CHEMICAL MIX					MORE AREAS



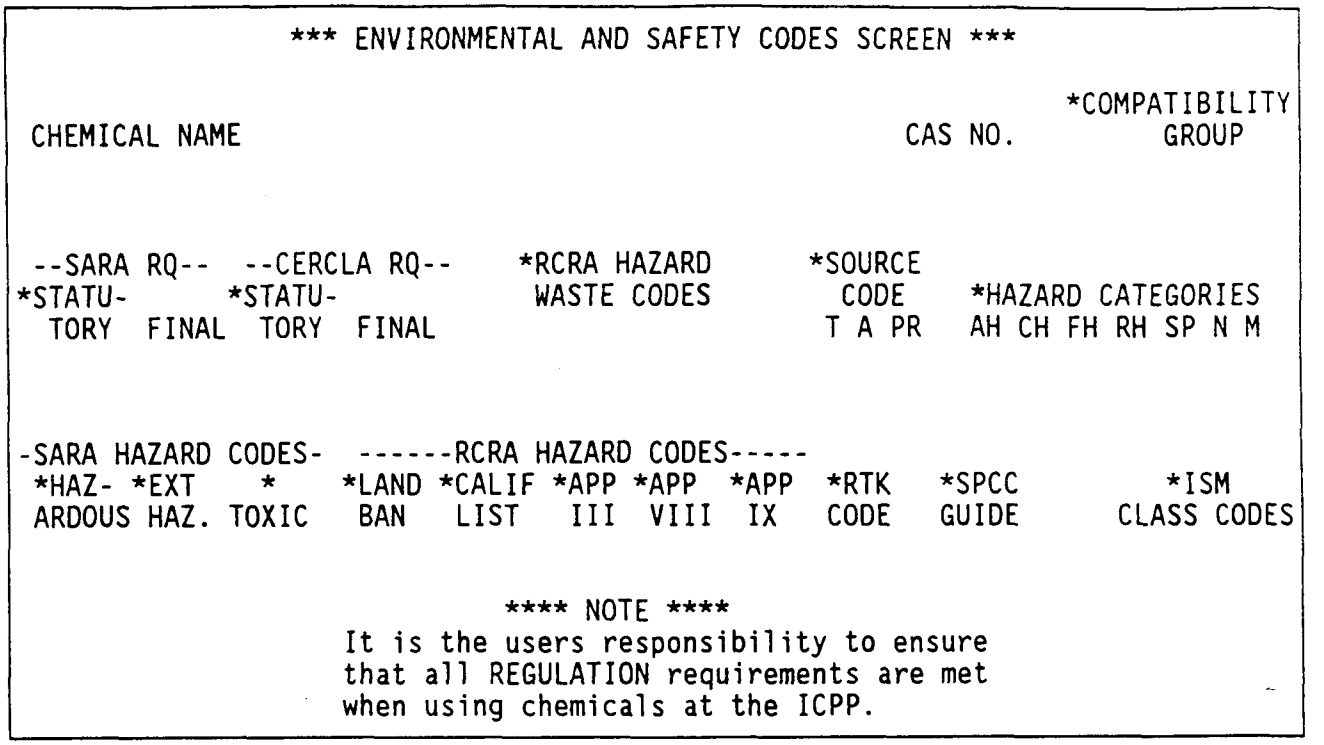
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE	HELP SCREEN	CLEAR SCREEN	READ NEXT	READ PRIOR	VESSEL MASTER	DONE

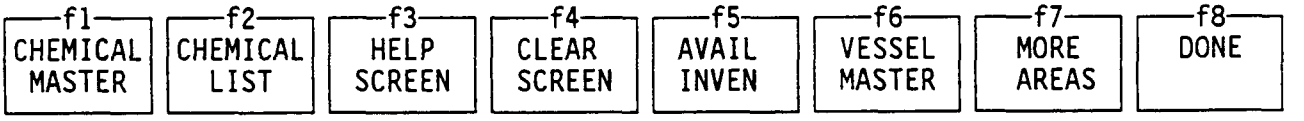


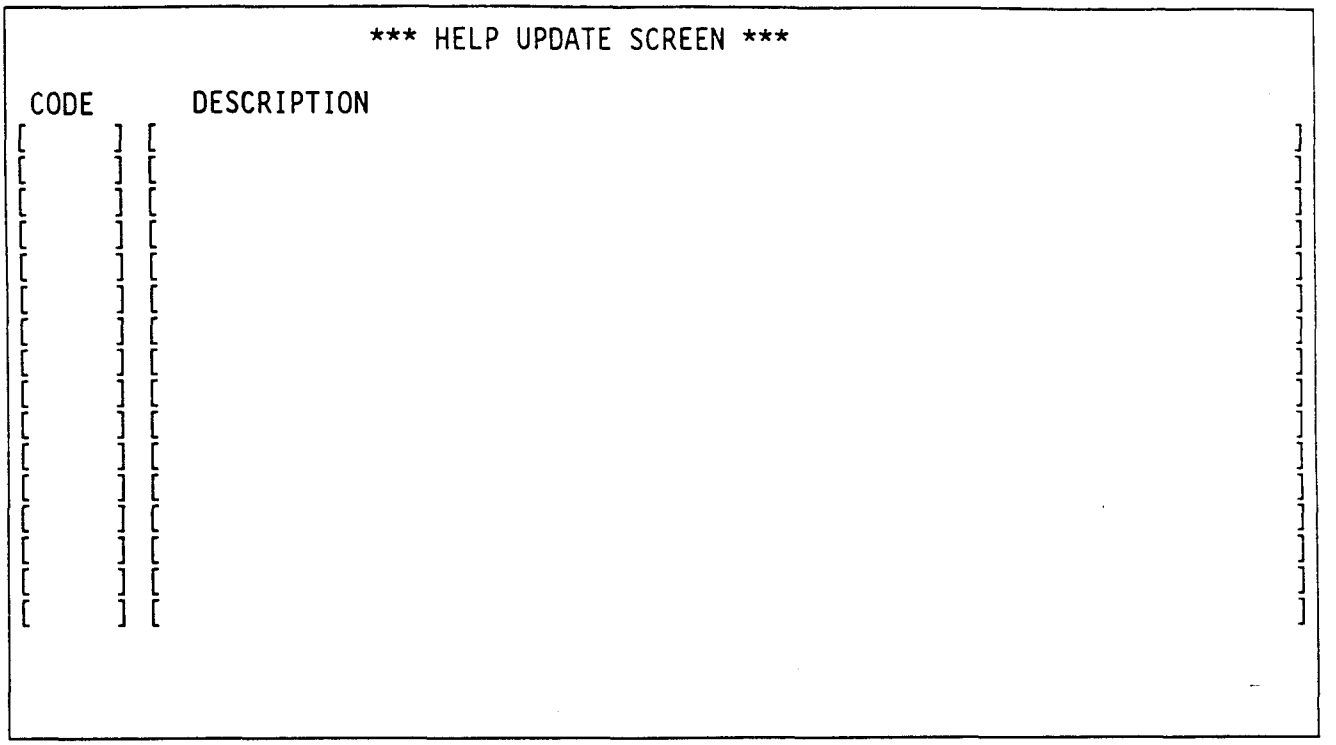
Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	ADD RECORD	UPDATE RECORD	CLEAR SCREEN	DELETE RECORD	RETRIEVE RECORD		DONE



Function Key Labels:





Function Key Labels:

f1	f2	f3	f4	f5	f6	f7	f8
PRINT SCREEN	UPDATE		CLEAR SCREEN		READ NEXT	READ PRIOR	MENU

Appendix C - Reports

Page

RUN FOR: 05/15/90 - 06/15/90

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

UNAPPROVED CHEMICAL PACKAGE TRANSFERS

HAZ400RP
PAGE : 1
RUN DATE: 06/25/90

TRANSFER DATE	CHEMICAL NAME	STOCK NO	COORDINATOR FROM	COORDINATOR TO	LOCATION	BLDG	ROOM
05/22/90	SILICON DIOXIDE		DBI	RSB	HOT CHEMISTRY LAB	627	104
05/30/90	AMMONIUM HYDROXIDE	03 00447	DBI	MDF	STOREROOM	663	141
05/31/90	HYDROGEN PEROXIDE	03 00421	MDF	DBI	STOREROOM	663	141
06/01/90	CALCIUM CARBONATE		HJP	DBI		602	208
06/01/90	CALCIUM CARBONATE		HJP	DBI		602	208

RUN FOR : 06/25/90
COORD :
STOCK NO:
CHEMICAL: SODIUM HYDROXIDE

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

PACKAGE CHEMICAL RECEIPTS

HAZ401RP
PAGE : 1
RUN DATE: 06/25/90

CHEMICAL NAME: SODIUM HYDROXIDE

STOCK NO	NO OF CONT	SIZE	QUANTITY RECEIVED	UNIT MEAS	CONT TYPE	DATE RECEIVED	REQUESTOR	COORD
	1	150	150.00	lb	I	11/25/89	C.E. JONES	CJJ
03 00455	1	100	100.00	lb	I	11/28/89	C.E. JONES	CJJ
03 00303	10	3	30.00	kg	N	12/03/89	NEWBY	HJP
	1	110	110.00	lb	J	12/09/89	NEWBY	HJP
03 00079	3	23	69.00	L	N	12/09/89	NEWBY	HJP
	10	100	1,000.00	lb	I	01/09/90	HALL	DAH
	3	100	300.00	lb	I	01/09/90	CHESNOVAR	TAC
	1	75	75.00	g	N	01/09/90	HALL	DAH
03 00302	1	500	500.00	g	N	01/15/90	STEVE MCKINNEY	SHM
	23	100	2,300.00	lb	I	01/18/90	KELLAN SMITH	CAQ
03 09351	1	110	110.00	lb	D	01/20/90	CHESNOVAR	TAC
03 00303	20	3	60.00	kg	N	03/15/90	C.E. JONES	CJJ
03 00085	18	100	1,800.00	ml	N	05/03/90	C. QUICK	CAQ
CHEMICAL TOTAL			4,357.70	lb				
REPORT TOTAL			4,357.70	lb				

COORD : HJP
BLDG/ROOM: 637 /113
STOCK NO :
CHEMICAL :

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

PACKAGE CHEMICAL AVAILABLE INVENTORY

HAZ402RP
PAGE : 1
RUN DATE: 06/25/90

COORDINATOR	BLDG	ROOM
HJP	637	113

CHEMICAL NAME: SODIUM HYDROXIDE

STOCK NO	CONCENTRATION WT %	CONCENTRATION MOLAR	QUANTITY	UNIT MEAS	LOCATION	LOT NUMBER
	19.0	6.0	1.60	L	CB	Nby1
03 00303			1,534.70	g		Nby2
03 00303			6,000.00	g		NBY#3

CHEMICAL NAME: SULFURIC ACID

STOCK NO	CONCENTRATION WT %	CONCENTRATION MOLAR	QUANTITY	UNIT MEAS	LOCATION	LOT NUMBER
	95.5	17.8	2.50	L	USH	Nby8
	95.5	17.8	2.17	L	UNH	Nby2
	95.5	17.8	2,477.50	ml		Nby9
	95.5	17.8	1,970.00	ml	UNH	Nby7
	96.0	18.0	2,500.00	ml		PAA #49A-F

CAS NUMBER : 71 55 6
CHEMICAL NAME: 1,1,1-TRICHLOROETHANE

LOCATION	BLDG	ROOM	CONT TYPE	QUANTITY	UNIT MEAS	COORD
D	684		M	2,000.00	ml	JHN
	627	103	M	500.00	ml	SKZ
CHEMICAL TOTAL				7.44	lb	
REPORT TOTAL				7.44	lb	

COORD :
LOCATION :
BLDG/ROOM:
CAS : 71 55 6
CHEMICAL :

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

ICPP CHEMICAL STORAGE LOCATIONS

HAZ403RP
PAGE : 1
RUN DATE: 06/25/90

CAS NUMBER : 71 55 6
CHEMICAL NAME: 1,1,1-TRICHLOROETHANE

LOCATION	BLDG	ROOM	CONT TYPE	QUANTITY	UNIT MEAS	COORD
D	684		M	2,000.00	ml	JHN
	627	103	M	500.00	ml	SKZ
CHEMICAL TOTAL				7.44	lb	
REPORT TOTAL				7.44	lb	

PROCESS: ANALYTICAL METHODS

CHEMICAL NAME	SODIUM kg	POTASSIUM kg
SULFURIC ACID	1,127.70	10.02
SULFURIC ACID	900.00	7.45
SULFURIC ACID	1,365.90	11.03
SULFURIC ACID	849.10	6.36
PROCESS TOTAL	4,242.70 kg	34.86 kg

PROCESS: CONSUMPTION

CHEMICAL NAME	SODIUM kg	POTASSIUM kg
N,N-DIETHYLETHANOLAMINE	.00	.00
N,N-DIETHYLETHANOLAMINE	.00	.00
SODIUM HYDROXIDE	.00	.00
PROCESS TOTAL	.00 kg	.00 kg

MONTH :
YEAR : 90
PROCESS :
CHEMICAL:

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

SODIUM AND POTASSIUM USAGE

SUMMARY PAGE

MONTH	SODIUM (kg)	POTASSIUM (kg)
01	1,577.70	35.83
02	893.05	26.63
03	747.74	16.78
04	1,356.47	37.84
05	578.00	9.63
06	1,115.76	10.36
07	893.26	15.37
08	946.93	26.53
09	946.33	27.74
10	1,987.75	38.99
11	834.74	27.97
12	1,232.54	15.53
TOTAL FOR YEAR 90	13,110.27 kg	289.20 kg

RUN FOR :
RUN BY : CHEMICAL
PROCESS :
CHEMICAL:

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

PACKAGE CHEMICAL USAGE

HAZ405RP
PAGE : 1
RUN DATE: 06/25/90

STOCK NO	CHEMICAL NAME	QUANTITY ISSUED	UNIT MEAS	DATE ISSUED	FINAL DISP	PROCESS	COORD
	ACETIC ACID, GLACIAL	2,500.00	ml	04/25/90	PEW	ANALYTICAL METHODS	CJJ
03 00440	ACETIC ACID, GLACIAL	8,000.00	ml	04/25/90	PEW	ANALYTICAL METHODS	HJP
	ACETIC ACID, GLACIAL	.07	L	05/10/90	PE	ANALYTICAL METHODS	CJJ
	ACETIC ACID, GLACIAL	66.00	L	05/10/90	PE	ANALYTICAL METHODS	CJJ
CHEMICAL TOTAL		176.71	lb				
03 90052	ALKALINITY C	90.00	ml	04/30/90	CON	CONSUMPTION	JMM
03 90052	ALKALINITY C	90.00	ml	04/30/90	CON	CONSUMPTION	JMM
03 90052	ALKALINITY C	90.00	ml	04/30/90	CON	CONSUMPTION	JMM
CHEMICAL TOTAL		.60	lb				
03 90046	ALKALINITY E	210.00	ml	04/02/90	CON	CONSUMPTION	SKZ
03 90046	ALKALINITY E	60.00	ml	04/30/90	CON	CONSUMPTION	CJJ
03 90046	ALKALINITY E	60.00	ml	04/30/90	CON	CONSUMPTION	SKZ
CHEMICAL TOTAL		.72	lb				
REPORT TOTAL		178.03	lb				

RUN FOR :
RUN BY : CHEMICAL
PROCESS :
CHEMICAL:

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

PACKAGE CHEMICAL USAGE

HAZ405RP
PAGE : 1
RUN DATE: 06/25/90

STOCK NO	CHEMICAL NAME	QUANTITY ISSUED	UNIT MEAS	DATE ISSUED	FINAL DISP	PROCESS	COORD
	ACETIC ACID, GLACIAL	2,500.00	ml	04/25/90	PEW	ANALYTICAL METHODS	CJJ
03 00440	ACETIC ACID, GLACIAL	8,000.00	ml	04/25/90	PEW	ANALYTICAL METHODS	HJP
	ACETIC ACID, GLACIAL	.07	L	05/10/90	PE	ANALYTICAL METHODS	CJJ
	ACETIC ACID, GLACIAL	66.00	L	05/10/90	PE	ANALYTICAL METHODS	CJJ
CHEMICAL TOTAL		176.71	lb				
03 90052	ALKALINITY C	90.00	ml	04/30/90	CON	CONSUMPTION	JMM
03 90052	ALKALINITY C	90.00	ml	04/30/90	CON	CONSUMPTION	JMM
03 90052	ALKALINITY C	90.00	ml	04/30/90	CON	CONSUMPTION	JMM
CHEMICAL TOTAL		.60	lb				
03 90046	ALKALINITY E	210.00	ml	04/02/90	CON	CONSUMPTION	SKZ
03 90046	ALKALINITY E	60.00	ml	04/30/90	CON	CONSUMPTION	CJJ
03 90046	ALKALINITY E	60.00	ml	04/30/90	CON	CONSUMPTION	SKZ
CHEMICAL TOTAL		.72	lb				
REPORT TOTAL		178.03	lb				

RUN FOR : 04/01/90 - 05/31/90 | WESTINGHOUSE IDAHO NUCLEAR CO., INC. | HAZ406RP
CHEMICAL: | | PAGE : 1
COORD : HJP | VESSEL CHEMICAL RECEIPTS | RUN DATE: 06/25/90

CHEMICAL: DIESEL FUEL

DATE RECEIVED	VOLUME RECEIVED	UNIT MEAS	VESSEL ID	SODIUM kg	POTASSIUM kg	COORD
04/03/90	446	gal	CFG 6003	.00	.00	HJP
05/15/90	240	gal	SAA 152	.00	.00	HJP
05/16/90	178	gal	SAA 152	.00	.00	HJP
05/23/90	47	gal	UTI 616	.00	.00	HJP
05/24/90	83	gal	UTI 620	.00	.00	HJP
05/29/90	1,317	gal	UTI 653	.00	.00	HJP
CHEMICAL TOTAL	16,199	lb				

CHEMICAL: GASOLINE, UNLEADED

DATE RECEIVED	VOLUME RECEIVED	UNIT MEAS	VESSEL ID	SODIUM kg	POTASSIUM kg	COORD
04/05/90	1,207	gal	SAA 153	.00	.00	HJP
04/25/90	1,485	gal	SAA 153	.00	.00	HJP
05/15/90	1,247	gal	SAA 153	.00	.00	HJP
CHEMICAL TOTAL	25,309	lb				

CHEMICAL: NITROGEN

DATE RECEIVED	VOLUME RECEIVED	UNIT MEAS	VESSEL ID	SODIUM kg	POTASSIUM kg	COORD
04/06/90	7,426	lb	WO 129	.00	.00	HJP
04/13/90	7,220	lb	WO 129	.00	.00	HJP
04/20/90	35,735	lb	WO 129	.00	.00	HJP
04/27/90	8,350	lb	WO 129	.00	.00	HJP
05/03/90	8,013	lb	WO 129	.00	.00	HJP
05/09/90	12,680	lb	WO 129	.00	.00	HJP
05/17/90	14,626	lb	WO 129	.00	.00	HJP
05/24/90	20,561	lb	WO 129	.00	.00	HJP
CHEMICAL TOTAL	114,611	lb				

REPORT TOTAL 156,119 lb

C.9

RUN FOR : 04/01/90 - 05/31/90 WESTINGHOUSE IDAHO NUCLEAR CO., INC. HAZ407RP
COORD : PAGE : 1
VESSEL : VESSEL TRANSFERS RUN DATE: 06/25/90

FROM VESSEL	TO VESSEL	TO CONT	VOLUME TRANSFERRED	UNIT MEAS	TRANSFER DATE	PROCESS	COORD
CFG 001	CONSUMP		250.00	gal	04/03/90		
CFG 6003	CFG 001		300.00	gal	04/03/90		LAW
HBF 102		M	79.00	L	04/04/90		LAW
HBF 116		G	48.00	L	04/17/90		LAW
HBF 116		G	42.00	L	04/17/90		LAW
HBF 118		G	18.00	L	04/02/90		LAW
HBF 118		G	27.00	L	05/10/90		LAW
SAA 152	CONSUMP		98.00	gal	05/18/90	CONSUMPTION	
SAA 153	CONSUMP		119.00	gal	04/02/90	CONSUMPTION	
SAA 153	CONSUMP		27.00	gal	04/06/90	CONSUMPTION	
SAA 153	CONSUMP		28.00	gal	04/11/90	CONSUMPTION	

RUN FOR: 04/02/90

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

CHEMICAL PACKAGE TRANSFERS AND APPROVALS

HAZ408RP
PAGE : 1
RUN DATE: 06/25/90

TRANSFER DATE	CHEMICAL NAME	STOCK NO	COORDINATOR FROM	COORDINATOR TO	APPROVED
04/02/90	ALKALINITY C	03 90052	DYH	TWC	DYH
04/02/90	NITRIC ACID		LAW	HJP	HJP
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SILICA GEL		DBI	DBI	DBI
04/02/90	SODIUM BOROHYDRIDE		DBI	DBI	DBI
04/02/90	SODIUM BOROHYDRIDE		DBI	DBI	DBI
04/03/90	TETRAHYDROFURAN	03 90015	DXP	DXP	ESD
04/04/90	1,2-ETHANEDIOL	03 90075	CJJ	TWC	DYH
04/04/90	1,2-ETHANEDIOL	03 90075	CJJ	TWC	TWC
04/04/90	1,2-ETHANEDIOL	03 90075	CJJ	TWC	TWC
04/04/90	2-PROPANOL	03 00511	CJJ	SKZ	SKZ

CHEMICAL NAME: ACETIC ACID, GLACIAL | CAS NUMBER: 64 19 7 | COMMON NAME: | FORMULA: CH3COOH

STOCK NUMBER	TYPE CONT	PHYS FORM	ANAL Y/N	SIZE CONT	STORAGE PR	STORAGE TEMP	PURE MIX	CONCENTRATION WT %	CONCENTRATION MOLAR	pH	DENSITY	SODIUM G/LB	POTASSIUM G/LB	UNIT MEAS
03 00440	M	L	N	2500	1	4	P	99.7	.000		1.05	.00	.00	ml

CHEMICAL NAME: 2-PROPANOL | CAS NUMBER: 67 63 0 | COMMON NAME: ISOPROPYL ALCOHOL | FORMULA: CH3CHOHCH3

STOCK NUMBER	TYPE CONT	PHYS FORM	ANAL Y/N	SIZE CONT	STORAGE PR	STORAGE TEMP	PURE MIX	CONCENTRATION WT %	CONCENTRATION MOLAR	pH	DENSITY	SODIUM G/LB	POTASSIUM G/LB	UNIT MEAS
03 00510	M	L	N	4	1	4	P	100.0	.000		.78	.00	.00	L
03 00511	M	L	N	500	1	4	P	100.0	.000		.79	.00	.00	ml

CHEMICAL NAME: 2-PROPANONE | CAS NUMBER: 67 64 1 | COMMON NAME: ACETONE | FORMULA: CH3COCH3

STOCK NUMBER	TYPE CONT	PHYS FORM	ANAL Y/N	SIZE CONT	STORAGE PR	STORAGE TEMP	PURE MIX	CONCENTRATION WT %	CONCENTRATION MOLAR	pH	DENSITY	SODIUM G/LB	POTASSIUM G/LB	UNIT MEAS
03 00532	M	L	N	4	1	4	P	100.0	.000		.79	.00	.00	L
03 00637	M	L	N	500	1	4	P	100.0	.000		.79	.00	.00	ml

CHEMICAL NAME: 1,1,1-TRICHLOROETHANE | CAS NUMBER: 71 55 6 | COMMON NAME: METHYL CHLOROFORM | FORMULA: CH3CC13

STOCK NUMBER	TYPE CONT	PHYS FORM	ANAL Y/N	SIZE CONT	STORAGE PR	STORAGE TEMP	PURE MIX	CONCENTRATION WT %	CONCENTRATION MOLAR	pH	DENSITY	SODIUM G/LB	POTASSIUM G/LB	UNIT MEAS
03 00726	D	L	N	30	1	4	P	100.0	.000		1.35	.00	.00	gal

CAS NUMBER	CHEMICAL NAME	COMMON NAME	FORMULA	MOL WT
83 32 9	ACENAPHTHENE		C12H2002	154.21
103 09 3	ACETIC ACID ALPHA-ETHYLHEXYL ESTER	ETHYLHEXYL ACETATE	C10H2002	172.30
123 86 4	ACETIC ACID BUTYL ESTER	N-BUTYL ACETATE	CH3COOCH2CH2CH2CH3	116.20
622 45 7	ACETIC ACID CYCLOHEXYL ESTER	CYCLOHEXYL ACETATE	C8H1402	142.20
142 92 7	ACETIC ACID HEXYL ESTER	HEXYL ACETATE	C8H1602	144.00
108 21 4	ACETIC ACID ISOPROPYL ESTER	ISOPROPYL ACETATE	CH3CO2CH(CH3)2	102.13
79 20 9	ACETIC ACID METHYL ESTER	METHYL ACETATE	CH3COOCH3	74.09
109 60 4	ACETIC ACID N-PROPYL ESTER	PROPYL ACETATE	CH3CO2CH2CH2CH3	102.12
64 19 7	ACETIC ACID, GLACIAL		CH3COOH	60.05
108 24 7	ACETIC ANHYDRIDE		(CH3CO)2O	102.09
102 01 2	ACETOACETANILIDE		CH3COCH2CONHC6H5	177.20
93 08 3	2'-ACETONAPHTHONE		C10H7COCH3	170.21
941 98 0	1-ACETONAPHTHONE		C10H7COCH3	170.21
75 05 8	ACETONITRILE	METHYL CYANIDE	CH3CN	41.05
98 86 2	ACETOPHENONE		C6H5COCH3	120.15
591 87 7	3-ACETOXYPROPENE	ALLYL ACETATE	C5H802	100.13
591 08 2	1-ACETYL-2-THIOUREA		CH3CONHCSNH2	118.15
520 45 6	3-ACETYL-6-METHYL-2H-PYRAN-2,4-(3H)DIONE	DEHYDROACETIC ACID	C8H804	168.14
74 86 2	ACETYLENE		C2H2	26.02
50 78 2	2-(ACETYLOXY)BENZOIC ACID	ACETYLSALICYLIC ACID	C6H4(OCOCH3)COOH	168.06
ID 14 8	ACID DICHROMATE ON SILOCEL			.00
628 94 4	ADIPAMIDE	ADIPIC ACID AMIDE	NH2CP(CH2)4CPNH2	144.17

CAS NUMBER	CHEMICAL NAME	COMMON NAME	FORMULA	MOL WT
83 32 9	ACENAPHTHENE		C12H2002	154.21
103 09 3	ACETIC ACID ALPHA-ETHYLHEXYL ESTER	ETHYLHEXYL ACETATE	C10H2002	172.30
123 86 4	ACETIC ACID BUTYL ESTER	N-BUTYL ACETATE	CH3COOCH2CH2CH2CH3	116.20
622 45 7	ACETIC ACID CYCLOHEXYL ESTER	CYCLOHEXYL ACETATE	C8H1402	142.20
142 92 7	ACETIC ACID HEXYL ESTER	HEXYL ACETATE	C8H1602	144.00
108 21 4	ACETIC ACID ISOPROPYL ESTER	ISOPROPYL ACETATE	CH3CO2CH(CH3)2	102.13
79 20 9	ACETIC ACID METHYL ESTER	METHYL ACETATE	CH3COOCH3	74.09
109 60 4	ACETIC ACID N-PROPYL ESTER	PROPYL ACETATE	CH3CO2CH2CH2CH3	102.12
64 19 7	ACETIC ACID, GLACIAL		CH3COOH	60.05
108 24 7	ACETIC ANHYDRIDE		(CH3CO)2O	102.09
102 01 2	ACETOACETANILIDE		CH3COCH2CONHC6H5	177.20
93 08 3	2'-ACETONAPHTHONE		C10H7COCH3	170.21
941 98 0	1-ACETONAPHTHONE		C10H7COCH3	170.21
75 05 8	ACETONITRILE	METHYL CYANIDE	CH3CN	41.05
98 86 2	ACETOPHENONE		C6H5COCH3	120.15
591 87 7	3-ACETOXYPROPENE	ALLYL ACETATE	C5H8O2	100.13
591 08 2	1-ACETYL-2-THIOUREA		CH3CONHCSNH2	118.15
520 45 6	3-ACETYL-6-METHYL-2H-PYRAN-2,4-(3H)DIONE	DEHYDROACETIC ACID	C8H8O4	168.14
74 86 2	ACETYLENE		C2H2	26.02
50 78 2	2-(ACETYLOXY)BENZOIC ACID	ACETYLSALICYLIC ACID	C6H4(OCOCH3)COOH	168.06
ID 14 8	ACID DICHROMATE ON SILOCEL			.00
628 94 4	ADIPAMIDE	ADIPIC ACID AMIDE	NH2CP(CH2)4CPNH2	144.17

CHEMICAL NAME	CAS NUMBER	HAZARD CATEGORIES				
		AHH	CHH	FH	SRPH	RH
ACENAPHTHENE	83 32 9	X	X	X		
ACETIC ACID ALPHA-ETHYLHEXYL ESTER	103 09 3	X		X		
ACETIC ACID BUTYL ESTER	123 86 4	X		X		
ACETIC ACID CYCLOHEXYL ESTER	622 45 7	X		X		
ACETIC ACID HEXYL ESTER	142 92 7	X		X		
ACETIC ACID ISOPROPYL ESTER	108 21 4	X		X		X
ACETIC ACID METHYL ESTER	79 20 9	X		X		X

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

HAZ413RP
PAGE : 1
RUN DATE: 06/25/90

COORDINATOR REPORT

COORDINATOR				ALTERNATE			
INITIALS	NAME	PHONE NO	MAIL STOP	INITIALS	NAME	PHONE NO	MAIL STOP
TWC	TERRY CHESNOVAR	3959	5301	DYH	DARRELL HALL	3001	5107
SEH	STEVE HOLADAY	3133	5217				
LRH	LLOYD HARDY	3869	5218	LXL	LUCINDA LITTLETON	3116	5218
DBI	DOUG ILLUM	0071	5218	PAA	PHILIP ANDERSON	3395	5218
CJJ	CAROL JONES	3382	5201	MKR	MARY KAY RUSH	3335	5201
SGM	STEVE MCKINNEY	3065	5202	BBH	BEN HUNTER	3284	5202

WESTINGHOUSE IDAHO NUCLEAR CO., INC.

COORDINATOR REPORT

COORDINATOR				ALTERNATE			
INITIALS	NAME	PHONE NO	MAIL STOP	INITIALS	NAME	PHONE NO	MAIL STOP
TWC	TERRY CHESNOVAR	3959	5301	DYH	DARRELL HALL	3001	5107
SEH	STEVE HOLADAY	3133	5217				
LRH	LLOYD HARDY	3869	5218	LXL	LUCINDA LITTLETON	3116	5218
DBI	DOUG ILLUM	0071	5218	PAA	PHILIP ANDERSON	3395	5218
CJJ	CAROL JONES	3382	5201	MKR	MARY KAY RUSH	3335	5201
SGM	STEVE MCKINNEY	3065	5202	BBH	BEN HUNTER	3284	5202

CAS NUMBER	CHEMICAL NAME	RTK CODE	ISM CODES	HAZARD CATEGORIES AH	CH	FH	SRPH	RH
82 22 4	1,1-DIANTHRIMIDE	000		X	X			
105 57 7	1,1-DIETHOXYETHANE	000		X	X	X		X
534 15 6	1,1-DIMETHOXYETHANE	000		X	X	X		X
101 81 5	1,1'-METHYLENEBIS(BENZENE)	000		X	X	X		
79 34 5	1,1,2,2-TETRACHLOROETHANE	000		X	X	X		
76 13 1	1,1,2-TRICHLORO- 1,2,2-TRIFLUOROETHANE	000		X				
71 55 6	1,1,1-TRICHLOROETHANE	210	B	X	X	X		
79 00 5	1,1,2-TRICHLOROETHANE	000	B S	X	X	X		
77 85 0	1,1,1-TRIS(HYDROXYMETHYL)ETHANE	000		X	X			

CHEMICAL NAME	CAS NUMBER	COMPATIBILITY GROUP	SOURCE CODE T A PR	APPENDIX III	APPENDIX VIII	APPENDIX IX	LAND BAN
HYDROFLUROIC ACID	7664 39 3	III	X X X		X		X

CALIF LIST	SARA HAZARD CODES HAZ- ARDOUS	EXT HAZ	TOXIC	HAZARD WASTE CODES	HAZARD CATEGORIES AH CH FH RH SP N	SARA RQ STAT- UTORY	SARA RQ FINAL	CERCLA RQ STAT- UTORY	CERCLA RQ FINAL	RTK CODE	SPCC GUIDES	ISM CODES
X	X	X	X	D002 U134	X X	NA	100	5000	100	400	49	A S

CHEMICAL NAME	CAS NUMBER	COMPATIBILITY GROUP	SOURCE CODE T A PR	APPENDIX III	APPENDIX VIII	APPENDIX IX	LAND BAN
NIOBIUM CARBIDE	12069 94 2						

CALIF LIST	SARA HAZARD CODES HAZ- ARDOUS	EXT HAZ	TOXIC	HAZARD WASTE CODES	HAZARD CATEGORIES AH CH FH RH SP N	SARA RQ STAT- UTORY	SARA RQ FINAL	CERCLA RQ STAT- UTORY	CERCLA RQ FINAL	RTK CODE	SPCC GUIDES	ISM CODES

CHEMICAL NAME	CAS NUMBER	COMPATIBILITY GROUP	SOURCE CODE T A PR	APPENDIX III	APPENDIX VIII	APPENDIX IX	LAND BAN
NITRIC ACID	7697 37 2	V	X X X				X

CALIF LIST	SARA HAZARD CODES HAZ- ARDOUS	EXT HAZ	TOXIC	HAZARD WASTE CODES	HAZARD CATEGORIES AH CH FH RH SP N	SARA RQ STAT- UTORY	SARA RQ FINAL	CERCLA RQ STAT- UTORY	CERCLA RQ FINAL	RTK CODE	SPCC GUIDES	ISM CODES
X	X	X	X	D002 D001	X X X X	1	1000	1000	1000	300	34	A S

FORMULA	CHEMICAL NAME	COMMON NAME	CAS NUMBER
C12H2002	ACENAPHTHENE		83 32 9

STOCK NUMBERS ASSOCIATED WITH CHEMICAL NAME
03 92541 03 93582

COORDINATORS WITH AVAILABLE INVNETORY
JMM CJJ CAQ

FORMULA	CHEMICAL NAME	COMMON NAME	CAS NUMBER
C10H2002	ACETIC ACID ALPHA-ETHYLHENYL		104 09 3

STOCK NUMBERS ASSOCIATED WITH CHEMICAL NAME
03 00318 03 10013 03 10845

COORDINATORS WITH AVAILABLE INVNETORY
HJP CJJ SKZ JMM

WINCO-11647

Addendum

HAZ-TRAC INTRODUCTION & CONSULTATION FOR WESTINGHOUSE MATERIALS COMPANY OF OHIO (WMCO)

I. BACKGROUND INFORMATION

In 1987, W.C. Moffitt, Vice President & Manager of Production, requested a review of all aspects of chemical handling at the ICPP. A Chemical Task Team (CTT) was formed with a charter to identify problems and recommend solutions. The areas reviewed included regulatory requirements, chemical tracking, and health and safety information.

The CTT found many of the problems could be resolved if all chemicals were identified, and if the transfer and issue records were tracked in detail. The CTT recommendations were implemented by the development of a comprehensive computerized hazardous chemical tracking system, referred to as Haz-Trac.

Haz-Trac became operational in Octo 9. Currently over 2000 chemicals are kept in Haz-Tr stem has improved the accuracy and reliability o mation, as well as supported departments t Chemicals are "flagged" to aid in the v s of tracking, permitting, spill/rele ing possible waste streams. Or rac can be procured. Additi rol through the use of Ha sharing and substitutior the use of hazardous al of waste minimi-

H may be accessed ons such as WCB

A tment can utilize the ate their needs. Poss ation are avoided by utili

Haz-Tra allowing WINCO to quickly respond uests from DOE, EPA, Mesh Team and more f Team. Haz-Trac was used to identify a monia sources contributing to the ammonium ni n the main stack. The system is used to compile a chemical inventory and toxic release reports. It has been used to provide information on toxic chemicals and under ground storage units to the Tiger Team.

Due to the efforts of the chemical coordinators and support from Production, WINCO is a leader in the computer tracking and inventory control of chemicals. Haz-Trac has been presented at the Plutonium/Uranium conference, INEL and

Westinghouse computer symposium, DOE-HQ Waste Minimization Work Shop IV, to EPA auditors and various other groups. It has been expressed repeatedly by these various organizations that Haz-Trac is more comprehensive than other systems reviewed. In addition the Haz-Trac team creators were awarded the bronze, Westinghouse Signature Award of Excellence.

II. WMCO BACKGROUND INFORMATION

Recent events at WMCO, have brought to light the urgent need to effectively track chemicals and waste. On April 30, 1991, John Volpe, Vice-President of Industrial, Radiological Safety and Training at WMCO requested WINCO introduce our Hazardous Chemical Tracking system (Haz-Trac) at their facility. WINCO was asked to install the Haz-Trac program, and provide training in its use.

III. OBJECTIVES

Carol Jones, Steve Zohner and Bart Cook were sent to respond to this request. They were at WMCO from May 6th through May 10, 1991.

The objectives of the trip included:

- to load the program onto their computer;
- introduce the Haz-Trac system to WMCO personnel; and
- provide training.

IV. ACTIVITIES

Interviews were conducted with people from Information System, Environmental Compliance, Analytical Chemistry, Industrial Hygiene, Maintenance, Procurement, Receiving Warehouse, and Computer System Development. The interviews provided information on how the plant operated, how individuals worked with chemicals, and needs for a centralized chemical tracking system.

Presentations on Haz-Trac were given. These presentations covered the following topics:

- background information on the needs for developing Haz-Trac;
- an overview of the computer application and specifications;
- benefits achieved through Haz-Trac; and
- sample computer screens to show the information contained and processed in Haz-Trac.

All three training sessions were full. Twenty two people from all areas of the plant attended, which included management. The training included:

- ownership and control of chemicals;
- chemical receipts, transfers, and issues;
- tracking chemicals in storage vessels; and
- reports.

V. OBSERVATIONS

Listed below are observations made following the presentations, interviews and training sessions.

- WMCO employees expressed a sense of responsibility to control and track chemicals in their area.
- WMCO lacked a centralized chemical computer data base and has no means of knowing the amount or type of chemicals they have.
- Multiple independent microcomputers used to identify chemicals do not provide the detailed tracking records necessary.
- Lacking the ability to track chemicals once they were issued from the warehouse makes it impossible to meet the reporting requirements of SARA.
- WMCO has a great many excess chemicals that are no longer used. The warehouse has approximately 250,000 pounds of 12 excess stock chemicals no longer used. Carol presented the INEL Chemical Exchange Program to WMCO. The warehouse asked that their chemicals be submitted to be the INEL Chemical Exchange Program.

VI. RECOMMENDATIONS

As a result of the interviews and training sessions the following recommendations and copies of WINCO applicable operating procedures and Haz-Trac User Manuals will be transmitted to WMCO on May 23, 1991.

- develop departmental procedures;
- assign chemical owners and define responsibilities;
- provide necessary training for tracking needs and computer use;

- perform complete a plant chemical inventory;
- control chemical procurement;
- use the Haz-Trac program as a training tool until approval is given to use Haz-Trac at WMCO; and
- update the existing system given to WMCO when WINCO's enhancement program is complete in July 1991.

WMCO Listing of Production Chemicals not in use

DESCRIPTION		QTY	REC DATE
Alumina, activated, grade A202, 3 X 6 mesh (or 1/2" x 1/4") (100 lb. bags)		3000 LBS.	10/22/87
Alumina, hydrated, Kaiser grade KH-31 Fine 3104 Reynolds grade RH-31 or Alcoa grade C-31 fine. Pok Pak (100 lb. bags)		59100 LBS.	10/21/87
Barium Carbonate, tech-grade, ceramic (50 lb. bags)		47900 LBS.	02/13/79
Charcoal, activated, powdered, G-60, or JF, packed in 50 lb. bags	*	1000 LBS.	04/21/75
Lime, Bulk Pebble, Calcium Oxide, CaO, available alkalinity 93%, screen size not to exceed 3/4"		190000 LBS.	10/08/87
Lithium Carbonate, Li2CO3, Technical Grade, to be furnished in 50 lb. bags		15950 LBS.	07/27/88
Magnesite, Calcined, #3 activated, (MGO) Michigan Chemical #340, 50 lb. multiwall bags, Martin Marietta Chemicals, #569 Refractions Div.	*	77300 LBS.	07/08/88
Potassium Carbonate, calcined 99-100% K2CO3 Commercial Grade (100 lb. bags)		28800 LBS.	06/18/87
Salt, Heat Treating, Nu-Sal-50% NACL-free flowing - 50% KCL. To be shipped in drums approx. 19" OD X 29" high		48800 LBS.	11/06/87
Soda Ash, commercial grade, 50 lb. bags	*	23700 LBS.	06/07/88
Urea, Industrial Grade, flake, shotted or prilled form packaged in 100 lb. bags		20400 LBS.	
Zirconia, Calcia Stabilized, Plasma Spray Powder, 12-1/2 lbs. per container		900 LBS.	01/24/89

* may be used during Plant 2/3 start-up

FOR MORE INFORMATION CONTACT: JEAN ALLEN (513)738-6475
(513)774-6475FTS
DARLENE SCHLEMMER (513)738-6617

Westinghouse Idaho Nuclear Company, Inc.

FORM WINCO-606-IX (5-90)

DAILY CHEMICAL TRANSFER LOG [a]
SAFETY CLASS III

Title data sheet is the control ... as per the Production Form Index:

Signature/Date

Organization No. _____

Date _____

0000 to 2400 (b)

TIME	REAGENT	SENDING: VESSEL NUMBER OR CONTAINER TYPE	RECEIVING: VESSEL NUMBER OR CONTAINER TYPE	VOLUME TRANSFERED U.O.M. (c)	TOTAL VOLUME FOR NEW MAKEUP (d)	INDICATE SPECIFIC USE: 604/WCF/RIGHT/WCELL OR DRUM	OPERATION SIGNATURE	SPECIAL PROCEDURE OR TRANSFER NUMBER

NO TRANSFERS THIS SHIFT (e) ☐

☐ 0000 - 0800

☐ 0800 - 1600

☐ 1600 - 2400

(a) To be used for all cold chemical transfers.

(b) Completed sheet turned into the chemical coordinator daily.

(c) Unit of measure: lbs, kg's, liters, gallons, grams, etc.

(d) Total volume of each new make-up. Do not include volume already in vessel.

(e) If no transfers are made, mark appropriate box.

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WESTINGHOUSE IDAHO NUCLEAR COMPANY, INC.

HAZ-TRAC DEMONSTRATION & CONSULTATION FOR WESTINGHOUSE MATERIALS COMPANY OF OHIO TRIP REPORT

BY BARTON L. COOK

HAZ-TRAC DEMONSTRATION & CONSULTATION FOR WESTINGHOUSE MATERIALS COMPANY OF OHIO TRIP REPORT

TABLE OF CONTENTS

HAZ-TRAC DEMONSTRATION & CONSULTATION FOR WESTINGHOUSE MATERIALS COMPANY OF OHIO TRIP REPORT

I. EXECUTIVE SUMMARY

Westinghouse Materials Company of Ohio (WMCO) requested the use of Westinghouse Idaho Nuclear Company's (WINCO) Hazardous Chemical Tracking (Haz-Trac) System at the end of April 1991. Personnel from WINCO were sent to the Feed Materials Processing Center (FMPC) to install the system during the week of May 6, 1991. Presentations, training, and interviews were conducted with WMCO personnel responsible for the procurement, storage, use, disposal, and reporting of chemicals.

The activities of the week brought to light the needs for procedures to control the chemical inventory and a centralized chemical tracking systems. The procedures will provide a foundation for controlling chemicals. These would include, but not be limited to, procedures that:

- assign ownership of chemicals
- require the tracking of chemicals
- define responsibilities for use and handling of chemicals
- require identification of a chemical's associated hazards when orders are placed.

A centralized computer system is needed to account for chemicals at the FMPC. To accomplish this, functional requirements need to be developed. These would define the exact needs of the FMPC based on input from all functional areas involved in the use and handling of chemicals and wastes. When completed the functional requirements would provide the criteria for selecting a system.

Based on this initial analysis, WINCO's Haz-Trac system should be considered for use at WMCO. Integrating Haz-Trac with the WMCO waste tracking system could provide a centralized computer system. Haz-Trac would track purchased chemicals from the time they are received to the time they are used. The WMCO waste tracking system would track the used chemicals as waste until they are disposed.

Haz-Trac will be available to WMCO in mid-July 1991. At that time, WMCO could perform a detailed evaluation of the system and compare it to their functional requirements.

II. BACKGROUND INFORMATION

WINCO developed Haz-Trac based on the findings of a Chemical Task Team charted in 1987 to review all aspects of chemical handling at the Idaho Chemical Processing Plant (ICPP). The task team recommended that greater controls be placed on chemicals and that a comprehensive system be developed for tracking chemical.

Haz-Trac was completed in October 1989. Over 2000 chemicals have been stored in the system. These chemicals are tracked from the point they are received at the ICPP to the point they are used. A history is kept of all transfers and issues of a chemical. This information is used for hazardous chemical inventory, toxic release, EPA, and DOE reporting. The system also contains EPA and OSHA information on all chemicals, which is available to WINCO personnel with access to the HP computer. Currently Haz-Trac is undergoing a major upgrade which will be completed in June 1991.

On April 30 1991, John Volpe, Vice-President of Industrial, Radiological Safety and Training at WMCO, requested the use of the Haz-Trac system at the FMPC. Recent events at the FMPC had brought to light an urgent need for effectively tracking chemicals and wastes. Mr. Volpe asked that Haz-Trac be shown to WMCO personnel for their use.

III. OBJECTIVES

The following people were sent to install Haz-Trac and provide assistance: Carol Jones from Production, Steve Zohner from Technical, and Bart Cook from the Controller's department. They were at the FMPC from May 6th through May 10, 1991.

The objectives of the trip included:

- demonstrating the Haz-Trac system to WMCO personnel
- providing training
- assisting in the identification of WMCO's needs
- determining the applicability of using Haz-Trac at WMCO.

IV. ACTIVITIES

WINCO personnel and David Wuerdeman from WMCO Information Systems interviewed seventeen people. The interviewees' job functions included: hazardous chemical inventory reporting, toxic chemical release reporting, environmental compliance, analytical chemistry, industrial hygiene, maintenance, procurement, receiving, and computer system development. The interviews provided information on how the plant operated, how individuals worked with chemicals, and needs for a chemical tracking system.

Presentations on Haz-Trac were given on May 7 and May 8, 1991 to approximately thirty-five people. The presentations covered the following topics:

- background information on the needs for developing Haz-Trac
- an overview of the computer application and specifications
- benefits achieved through Haz-Trac
- sample computer screens showing the information contained and processed in Haz-Trac.

Twenty-two people attended three training sessions. These included people from the following areas: Analytical Labs, Utilities, Receiving, Industrial Hygiene & Safety, Centralized Training, Maintenance & Support Services, and Environmental Compliance. The training included:

- establishing ownership and control of chemicals
- receiving, transferring, and issuing chemicals
- tracking chemicals in storage vessels
- reporting information stored in the system.

V. OBSERVATIONS

Observations from the week have been divided into the following areas:

A. Culture

Throughout the presentations, interviews, and training, WMCO employees continually showed interest in improving the accountability for chemicals and wastes. Some individuals had taken actions to develop controls over their own areas. Several people had developed independent computer systems for tracking chemical information on microcomputers and DEC computers.

A Total Quality team was recently established to develop a means for inventorying and tracking chemicals. Initially, some members of the team seemed to feel that the introduction of Haz-Trac was an intrusion on their mission. However, these concerns seemed to diminish as the WMCO personnel became familiar with Haz-Trac and its functions.

B. Purchased Chemical Inventory

Most of the chemical inventory at the FMPC is in the form of package containers. Over 1,000 bottles of chemicals used in labs and many large volumes of chemicals used in production have been excessed. Plans are being made to eliminate remaining large amounts of alumina, barium carbonate, charcoal powder, lime, lithium carbonate, magnetite, potassium carbonate, salt, soda ash, urea, and zirconia.

When chemicals are ordered, the information is kept in the MCBA purchasing system. The receipt of a chemical is entered in the purchasing system and the chemical is added to inventory in the Maintenance Management and Inventory Control System (MMICS).

If the chemical is delivered directly to a requester, it is immediately issued from the inventory. Otherwise the chemical is kept as a stock item until it is issued. In either case, the tracking of chemicals ceases once they are issued.

Currently, chemicals being ordered are not identified by whether or not they have associated hazards. This has caused problems in Receiving when chemicals arrived without Material Safety Data Sheets (MSDS). Unidentified hazardous chemical may not receive the appropriate treatment, until the order is identified through the MCBA system and the chemical's MSDS is found.

During the interviews, there appeared to be a lack of procedures for controlling chemicals. Ownership of the chemicals was not clearly defined. There were no known requirements for tracking chemicals. Additionally, no documentation was available on the responsibilities associated with using and handling chemicals.

V. OBSERVATIONS (CONTINUED)

C. Chemical Waste Inventory

There are over 130,000 55-gallon drums of waste products at the FMPC. Sampling is being done on lots to identify the contents of the drums. WMCO Information Systems is currently developing a waste tracking system on an HP computer.

VI. RECOMMENDATIONS

The Total Quality team should be responsible for implementing the recommendations provided below. The team already has most of the required expertise. It does need to be expanded to guarantee that all functional areas of chemical and waste handling are represented. Information Systems should also be included to ensure that the computer systems meet the WMCO's needs identified by the team.

Listed below are recommendations based on observations made during the week:

- Procedures need to be developed to provide a foundation for controlling chemicals. These would include, but not be limited to, procedures that:
  - assign ownership of chemicals
  - require the tracking of chemicals
  - define responsibilities for use and handling of chemicals
  - require identification of a chemical's associated hazards when orders are placed.

  Appendix A contains several WINCO procedures that may be used as guidelines.

- A centralized computer system is needed to account for chemicals at the FMPC. To accomplish this, functional requirements need to be develop. These would define the exact needs of the FMPC based on input from all functional areas involved in the use and handling of chemicals and wastes. When completed the functional requirements would provide the criteria for selecting a system.

  Based on this initial analysis, WINCO's Haz-Trac system should be considered for use at WMCO. Integrating Haz-Trac with the WMCO waste tracking system could provide a centralized computer system. Haz-Trac would track purchased chemicals from the time they are received to the time they are used. The WMCO waste tracking system would track the used chemicals as waste until they are disposed.

  Both systems operate on HP computers. Haz-Trac would have to be modified to include information specific to the FMPC, receive information from MMICS when a chemical is received and issued, and send information to the WMCO waste tracking system. Haz-Trac requires the following software on an HP computer: COBOL, TurboIMAGE, OMNIDEX, VIEW/3000, HI-LI, and Business Report Writer. WMCO would need to purchase OMNIDEX and HI-LI.

  A major enhancement of Haz-Trac will be completed in June 1991. The system would be available to WMCO in mid-July 1991. At that time, WMCO could perform a detailed evaluation of the system and compare it to their functional requirements.

VI. RECOMMENDATIONS (CONTINUED)

- WMCO should become involved the DOE chemical exchange program that is beginning at the Idaho National Engineering Laboratory. This will assist in the reduction of larger volumes of chemicals listed in Section V under Purchase Chemical Inventory. It would allow other DOE sites to use the chemicals, instead of having them excessed.