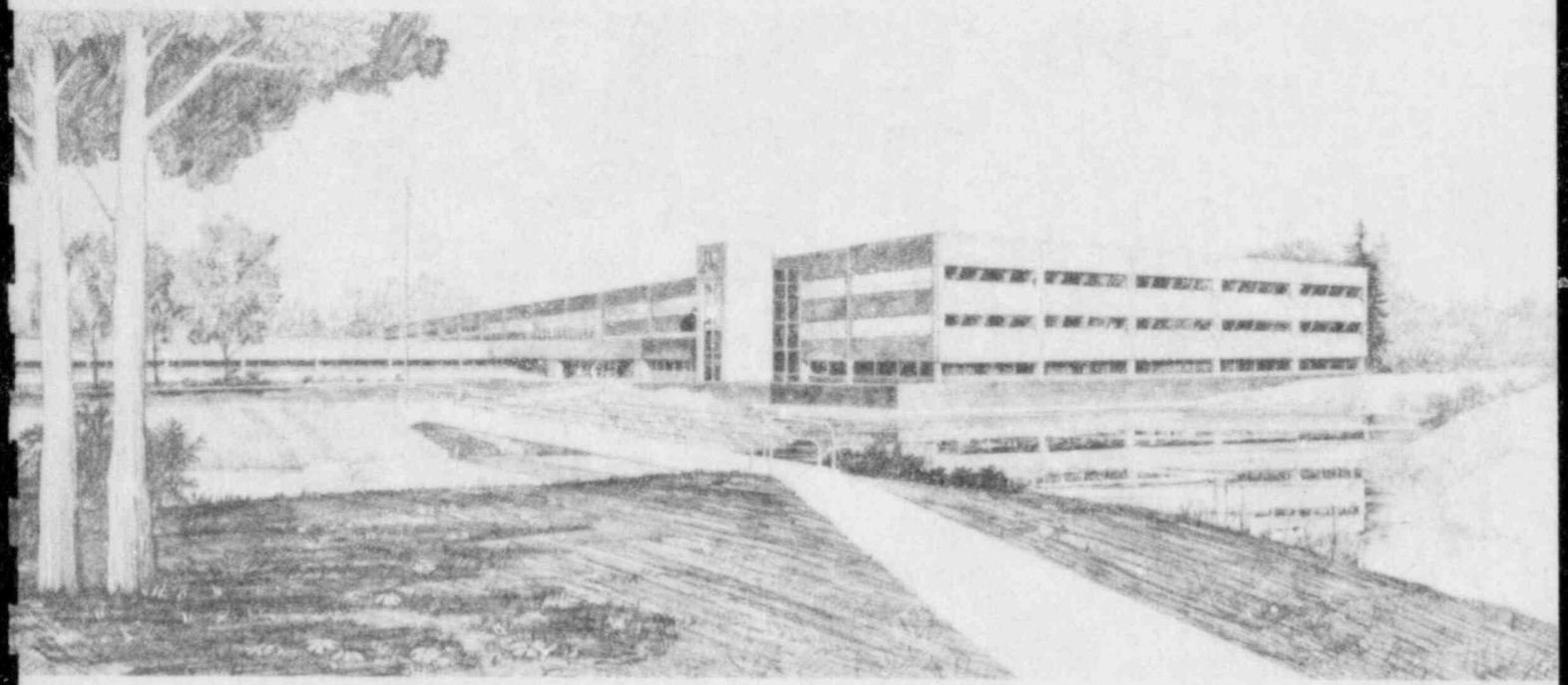
NUREG/CR-2531
EGG-2164
REVISION 2



Idaho National Engineering Laboratory
Operated by the U.S. Department of Energy

Introductory User's Manual for the U.S. Nuclear Regulatcry Commission Reactor Safety Research Data Bank

Nora R. Scofield
Hershal A. Hardy
E. Thomas Laats

March 1984

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INTRODUCTORY USER'S MANUAL FOR THE U.S. NUCLEAR REGULATORY COMMISSION REACTOR SAFETY RESEARCH DATA BANK

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ABSTRACT

The United States Nuclear Regulatory Commission (NRC) has established the NRC/Division of Accident Evaluation (DAE) Data Bank Program to collect, store, and make available data from the many domestic and foreign water reactor safety research programs. Local direction of the program is provided by EG&G Idaho, Inc., prime contractor for the Department of Energy (DOE) at the Idaho National Engineering Laboratory (INEL).

The NRC/DAE Data Bank Program provides a central computer storage mechanism and access software for data that is to be used by code development and assessment groups in meeting the code and correlation needs of the nuclear industry. The administrative portion of the program provides data entry, documentation, training, and advisory services to users and the NRC. The NRC/DAE Data Bank and the capabilities of the data access software are described in this document.

FIN No. A6102
NRC/DAE Data Bank

SUMMARY

The United States Nuclear Regulatory Commission (NRC) has established the NRC/Division of Accident Evaluation (DAE) Data Bank Program to collect, store, and make available data from the many domestic and foreign water reactor safety research programs. Local direction of the program is provided by EG&G Idaho, Inc., at the Idaho National Engineering Laboratory (INEL).

The NRC/DAE Data Bank program provides a central computer storage mechanism and access software for data to be used by code development and code assessment groups in meeting the code and correlation needs of the nuclear industry. The administrative portion of the program provides data entry, documentation, training, and advisory services to users and the NRC.

The Data Bank is part of the INEL Scientific Data Management System (ISDMS). The inclusion of the Data Bank in this system enables the user to store, select, discriminate, manipulate, and plot the experimental data as a function of time or against other data. New data and data management software are continually being added to the Data Bank.

ACKNOWLEDGMENTS

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CONTENTS

FIGURES

INTRODUCTORY USER'S MANUAL FOR THE U.S. NUCLEAR REGULATORY COMMISSION REACTOR SAFETY RESEARCH DATA BANK

1. INTRODUCTION

The United States Nuclear Regulatory Commission (NRC) has established the NRC/Division of Accident Evaluation (DAE) Data Bank to collect, store, and make available the data from the many domestic and foreign water reactor safety research programs. Data are processed and stored on the Control Data Corporation (CDC) CYBER 176 computer system at the Idaho National Engineering Laboratory (INEL). Local direction of the program is provided by EG&G Idaho, Inc., prime contractor for the Department of Energy at the INEL.

The NRC/DAE Data Bank provides a central computer-based storage mechanism and access software developed at the INEL, for data that will be used by code development, code assessment, and experimentation groups in meeting the needs of the nuclear industry. In addition to providing data storage and access software, the Data Bank program supplies data entry, documentation, and training and advisory services to users and the NRC.

The NRC/DAE Data Bank is a unique facility not available from commercial computer services. The NRC and United States Department of Energy, therefore, have determined that the Data Bank may also be accessed interactively by users who are not under their sponsorship; for example, public utilities, universities, or research organizations. The computer system access available to these users, however, is limited to the Data Bank and the INEL Scientific Data Management System (ISDMS). These users are referred to as "limited users" throughout the remainder of this document. All other users are referred to as "unlimited users."

The intent of this manual is to provide an introduction to the Data Bank and its capabilities, and to guide the general Data Bank user through some of the data storage, retrieval, and graphics functions that are available. There are three methods of using Data Bank data.

1. Magnetic tape, furnished on request, in a standard 80 column card image format

2. Batch processing where complete jobs may be submitted by the user by way of punched cards or remote terminal (not available to limited users)

3. Interactive processing by way of remote terminal that allows the user to execute instructions, one command at a time.

It is the third method to which this manual is primarily directed.

A general overview of the Data Bank's structure, functions, and capabilities is given in Section 2. The functions and their access through computer terminals are the subjects of Sections 3 through 10. Supporting material and example problems are presented in Appendices A through K.

The presentation of experiment data reported by EG&G Idaho, Inc., normally includes the uncertainty of the data. For this user's manual, however, no uncertainties are shown on the data plots. The data plots used here are strictly examples, intended only to illustrate the Data Bank's capabilities, and not to report selected experiment results.

2. DATA BANK OVERVIEW

An overview of the Data Bank is provided in this section. In particular, this overview includes discussions of the basic purpose and functions of the data stored in the Bank, of the software and hardware employed by the Bank, and of other supporting documentation.

2.1 Functions of the Data Bank

The concept of a national Data Bank for storing and disseminating water reactor safety data is based on the premise that a single organization can create and operate a more efficient and cost effective information support program than can the individual facilities that generate the data. The NRC/DAE Data Bank provides a central storage facility developed at the INEL for those data that the code development, code assessment, and experimentation groups can utilize in meeting the overall objective of increased nuclear safety.

The user has immediate access to the Data Bank by typing in commands from his own local computer terminal. These on-line data storage, retrieval, and graphics capabilities enable him to manipulate test data, produce data plots on the terminal screen, and make data comparisons.

Each of the test facilities is responsible for its own data qualification procedures. The NRC and the Data Bank administration are notified about any data errors, and the user community is then informed about resultant corrections.

2.2 Test Facilities

The major nuclear reactor test facilities are identified in Figure 1. Each facility has a specific purpose in the water reactor safety effort. All of these facilities, however, provide data that will contribute to the overall water reactor safety research objective of a safe, acceptable nuclear power production.

The solid circles on the map (Figure 1) indicate those facilities that presently have data stored in the Bank. The test data from each of these facilities are further identified in Appendix A. The dotted circles indicate the sources of facility data that will be added when these data are available to the Data Bank. The nature of data added to the Bank is determined by requests from the NRC and the unlimited user community.

2.3 Data Storage

Test data are stored on data files with an eight-character identification code, as illustrated in Figure 2. The first two characters identify the test facility. The next four characters indicate the test name, and the remaining two characters represent the test parameter. Actual test data names reflect the names assigned by the test facility. Therefore, with the aid of a data report, the user may readily identify the test data. Additional information such as uncertainties and data qualifications may be stored on the test data files.

2.4 Data Management Overview

The NRC/DAE Data Bank utilizes the ISDMS to process the stored experimental data. ISDMS is a generalized scientific data processing system that supports the efforts of many groups at the INEL.

The ISDMS has a modular framework in which each of the computer program modules (processors) is designed to function independently. As a result of this feature, processors may be added or existing ones modified without affecting other ISDMS capabilities. The most pertinent processors for Data Bank users are described later in this manual.

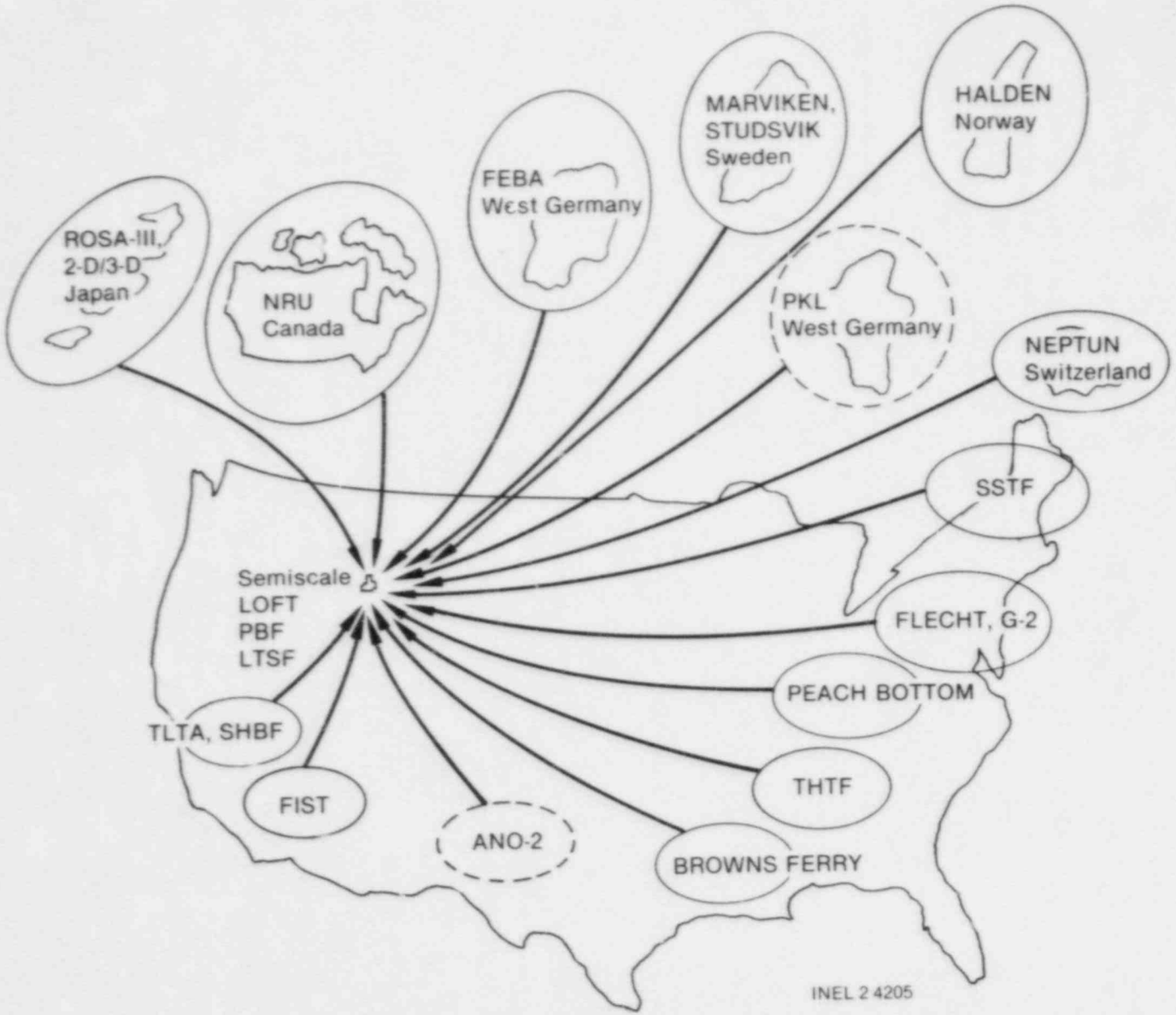

Figure 1. Water reactor safety research facilities that are actual and potential data supplies to Data Bank.

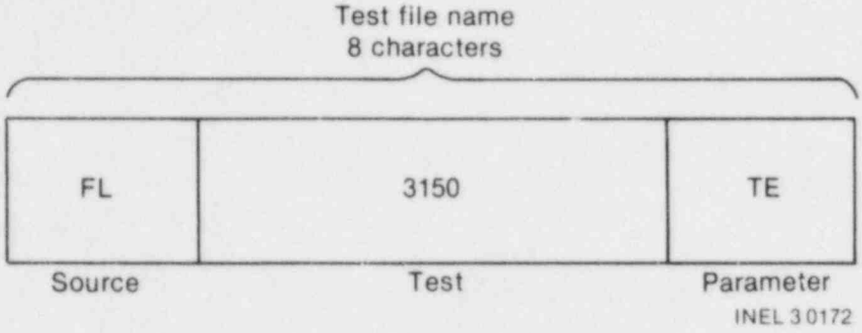

Figure 2. Data Bank test data identification pattern.

Printed documentation describing the ISDMS and Data Bank are stored on the computer and are made available to the user by commands entered through a computer terminal. Also, periodic Data Bank newsletters make users aware of new available data and information about new software commands.

2.5 INEL Computer System Description

The Data Bank utilizes the INEL scientific computer system, which is composed of two Control Data Corporation (CDC) CYBER 176 computers. ISDMS and the Data Bank may be accessed on either of these computers.

Because there are numerous types of terminals, no attempt will be made to address the operations of the local terminal. Generally, any terminal may be used to retrieve Bank data and to perform data manipulations. However, the INTERACTIVE plotting capabilities require the use of a TEKTRONIX PLOT-10 compatible terminal or some method for emulating a TEKTRONIX terminal.

For offsite users, a telephone modem is required to interface between the local terminal and the telephone line. This modem may be purchased or rented from the local public telephone company.

2.6 Available Documentation

The following documents are available to describe ISDMS and the Data Bank, and are routinely given to every new user:

INEL CYBER Users Guide[1]
ISDMS Documentation[2]
Data Bank Test Summary Information

Additional CYBER documentation is available from the Computer Science Center Library at the INEL.

2.7 Data Bank Information

Data Bank administration information can be obtained by calling the following telephone numbers:

1-208-526-9324 (FTS 583-9324), or
1-208-526-9507 (FTS 583-9507), or
1-208-526-9071 (FTS 583-9071).

3. GETTING STARTED

The remainder of this manual is designed to lead the user, step by step, through the Data Bank. The commands described in the subsequent sections are sequenced in the general order in which their use may be required by a new Data Bank user. As a result, successful execution of a command referred to in one of the sections may be dependent on the prior execution of a command in a previous section. These related commands are noted in the text.

ISDMS and the Data Bank may be used in an INTERACTIVE mode, or in a BATCH mode, or both. When INTERACTIVE use is desired, a command is entered and the response is displayed on the local terminal screen. Commands and user programs may be processed by the computer (BATCH mode), and the result (OUTPUT) may be printed on paper or viewed on the terminal screen. These various options are identified throughout the text.

Although most of this manual is applicable to both limited and unlimited users (see Section 1), there are some differences. Sections where differences exist are noted by adding an (A) or (B) to the section heading numbers as follows:

1. A suffix of (A) is for unlimited users only
2. A suffix of (B) is for limited users only
3. If there is no suffix, then the section is applicable to both types of users.

The remainder of this section describes how to get started, and how to deal with commonly occurring problems.

3.1(A) LOGIN

The following steps are used to LOGIN to the computer.

STEPS:

1. Ready the user local terminal—

   turn power on, set baud rate, etc.

2. Establish connection to the INEL computer—

   Offsite: Appendix B describes the dial-up procedure.

   Onsite: Turn on the modem connected to a CDC port.

3. Touch RETURN key (usually twice)—

   Response:

   INEL INTERCOM
   DATE
   TIME

   PLEASE LOGIN

4. Type in the LOGIN sequence.

Appendix C describes the LOGIN sequence format. The LOGIN parameters are unique, and are issued to each user. Each typed-in command must be input to the computer system by touching the RETURN key at the end of the command sequence. A typical LOGIN format is

LOGIN,UID,PW,C=XXXXXXXXX,SUP

Response:

SUP UPDATED TODAY IS
#END INEL SUP SYSBULL
LOGGED IN ON S/N 206
COMMAND-

This response indicates that the user is LOGGED in and ready to proceed.

3.1(B) LOGIN

The LOGIN sequence for limited users continues by automatically initiating ISDMS. The response is the same as shown in Section 4.1(A).

3.2 Abnormal Computer Responses

When trying to establish communication with the INEL computer, certain problems may occur. The following list suggests some problems and solutions if there is no response when trying to establish communication with the INEL computer system.

1. *The computer is down.* Switching to the other computer will usually resolve the problem. Occasionally both computers are down at the same time. This condition will rarely exist for more than one-half hour. One exception is a power failure.

2. *INTERCOM is not in operation.* Check INTERCOM hours in Appendix B.

3. *Offsite users may have basic communication problems* (see Appendix B).

If the terminal response to an input command is slow (>1 minute):

1. *INTERCOM usage may be heavy.* End the terminal session (see Sections 4.3-4.5) and reschedule.

2. *The computer is going down.* Turning off the terminal and modem switches is *NOT* recommended. The user will still be LOGGED in and will tie up any files attached at the terminal. To remedy the problem, the following steps are suggested.

    a. Touch the RETURN key in case there has been an interruption in contact between computer and terminal. The interruption problem is more common to offsite terminals.

    b. Type in another command, just in case the terminal response was missed.

    c. Use the %A command.

If there is no response to any of the above steps, *wait* until there is a response or until there is a computer-terminal disconnect (this waiting period will usually be no longer than 5 minutes). With a disconnect, the user is automatically logged out and any programs being used are returned.

If an error message is displayed on the terminal screen, use the following procedure:

1. In ISDMS, use the HELP command (see Section 4.7), or consult ISDMS documentation

2. Outside ISDMS, consult CYBER documentation (unlimited users only)

3. Call Data Bank Administration.

4. ISDMS

As stated previously, the Data Bank is part of the INEL Scientific Data Management System (ISDMS). This section describes the basic computer terminal commands required to enter and leave ISDMS, and to obtain supporting ISDMS documentation through a local computer terminal. Appendix D identifies the five most pertinent ISDMS processors (computer programs) to Data Bank that are discussed in this manual. MASTER is the coordinating program. Data Bank data may use any of the processors.

4.1(A) Entering ISDMS

In order to enter ISDMS and the Data Bank, the user must first enter MASTER by typing

BEGIN,MASTER

Response:

MASTER 1.2 (IDAHO NATIONAL ENGINEERING LABORATORY)
SCIENTIFIC DATA MANAGEMENT SYSTEM
==========

TIME
DATE

COMMAND...

4.1(B) Entering ISDMS

The LOGIN sequence for the limited user automatically initiates ISDMS [see Section 3.1(B)].

4.2 Input Commands in ISDMS

Within ISDMS, input command text (and numbers) may be separated by a comma, space, or multiple spaces. Many commands may be abbreviated. For example, any of the following forms of commands are acceptable.

SEARCH,DBSCOM
SEARCH DBSCOM
SEARCH DBSCOM
SE,DBSCOM
SE DBSCOM
SE DBSCOM

In this manual, command abbreviations will be underlined. For example, the first command listed above would be shown as

SEARCH,DBSCOM

NOTE: Only the initial term of the command may be abbreviated. Subsequent terms cannot be abbreviated.

4.3 How to Terminate User Execution

To ABORT commands that have been input (after RETURN key has been touched), touch the BREAK key and enter

%A

CAUTION: This command is a drastic action and may result in the user being aborted from the processor and the data calculations may be lost.

4.4(A) Leaving ISDMS

When the unlimited user desires to leave ISDMS, the input command is

RETURN

Response:

```
*****************************************
***  THANKS FOR USING I S D M S   ***
***  HAVE A NICE DAY .....        ***
*****************************************
```

COMMAND-

4.4(B) Leaving ISDMS

When the limited user desires to leave ISDMS, the command sequence and response are the same as shown in Section 4.4(A). The limited user is then automatically logged out (see Section 4.5).

4.5 LOGOUT

To end the terminal session

Input:

LOGOUT

Response:

```
CPA
SYS TIME
CONNECT TIME
SYS TIME CHARGE
CONNECT TIME CHARGE
TOTAL SESSION COST
```

This listing will reflect any computer charges as well as the terminal connect time charges.

4.6 ISDMS Documentation

A complete set of ISDMS documents was released in August 1981 and is updated regularly. It is available to the user through a computer terminal (see Section 2.6) or from Data Bank Administration. Updates to the individual processor documents may be printed by using the DOCS command in MASTER. The following command produces a listing of current ISDMS documentation.

Input:

DOCS

Partial response:

**** AVAILABLE DOCUMENTATION ****

---

01 - ISDMS INTRODUCTION
02 - ISDMS ENVIRONMENTAL LIBRARY
03 - MASTER (INTERACTIVE/BATCH EXECUTIVE)
04 - MAGNUM (INTERACTIVE GRAPHICS)
05 - QKPLTI (BATCH GRAPHICS USING IGS)
06 - POST (PLOT FILE POST-PROCESSOR)
07 - FILTER (GENERAL DIGITAL FILTER)
08 - COMEDIT (GENERAL DATA FILE EDITING)
09 - SEARCH (FILE DIRECTORY/RETRIEVAL)
10 - BACKUP/RESTORE (DATA MIGRATION)
11 - MUX/DEMUX (MULTIPLEXED DATA HANDLING)
12 - EXPERT (GENERAL FILE MANIPULATION)
13 - WIZARD (STANDARD COMPUTED PARAMETERS)
14 - MERGE (DATA FILE COPY/MERGE)
15 - COMSID (CWAF TO SIDU FILE CONVERSION)
16 - REFORM (GENERAL DATA CONVERSION)
17 - RELCOM (RELAP4 TO CWAF FILE CONVERSION)
18 - MAPPER (HIGH QUALITY ILLUSTRATION GRAPHICS)
19 - NRC/RSR DATA BANK DATA SUMMARY
.
.
.

33 - NRC DATA BANK USERS MANUAL
.
.
.

The listing of Data Bank Contents (Appendix A) is produced by

Input:

DOCS 19

A listing of this manual is produced by

Input:

DOCS 33

If the user wishes to view the document on a terminal, the command is

Input:

DOCB 33

4.7 ISDMS HELP

When HELP is entered within any of the processors, a list of valid commands is displayed for that particular processor. For example, in MASTER

Input:

HELP

Partial response:

```
* VALID COMMANDS *
ADQ ..... .. UTILITY EXECUTIVE
ATTACH ..... PERM FILE ATTACH.
AUDIT ..... QUICK SORTED AUDIT.
BACKUP ..... COPY CWAF FILES FROM RMS TO TAPE.
```

To produce an abbreviated description of the specified command, use

Input:

HELP AUDIT

Response:

```
*AUDIT* - QUICK SORTED AUDIT.

ABBREVIATION : A

AUDIT UID [HCOPY]

UID ..... USERID.
HCOPY ..... OPTIONAL HARD COPY PARAMETER.
```

A complete explanation for each command is given in the respective processor documents.

5. SEARCH

The SEARCH processor contains the Data Bank directory and data retrieval programs. All Data Bank data files are stored with identification code (UID) of DBSCOM, which was described in Section 2. Entry to SEARCH is from MASTER.

Input:

SEARCH DBSCOM

Response:

SEARCH 1.2 (IDAHO NATIONAL ENGINEERING LABORATORY)

TIME
DATE

READY ...

NOTE: Due to an automatic directory updating procedure, there may be a 30 second time delay between this input and the response.

5.1(A) Obtaining Data Bank Test Information

Test descriptions and naming conventions for all Data Bank tests are available in SEARCH. This information file may be used interactively where the user obtains test information by a menu selection or by BATCHing this information file to a printer. Appendix E demonstrates the INTERACTIVE menu approach to obtain test information.

The following BATCH commands are entered from INTERCOM mode (see Section 3.1) to produce the listing of Data Bank Test Summaries shown in Appendix F.

Input:

ATTACH,INFO,INFORMATION,ID=DBSCOM
ATTACH,DATA,ID=DBSCOM
DATA
BATCH,OUTPUT,PRINT,UID

NOTE: This listing requires a computer printer.

5.1(B) Obtaining Data Bank Test Information

Since the BATCH command in Section 5.1(A) is not available to the limited user, this information may be obtained with a request to Data Bank Administration (see Section 2.7). The information is available INTERACTIVEly as shown in Appendix E.

5.2 Locating Test Data in the Data Bank

All of the Data Bank test data are stored on magnetic tape, or on disk. When the user enters the appropriate request command, the data are copied from tape onto computer disks. Because of the cost of storing data on disk, test data not accessed for three days, are automatically removed from disk.

The FIND command searches the test data directory, and identifies whether the data reside on tape or disk, as demonstrated by the following examples.

Input:

FIND FL3550TE

Response:

PERM. FILE NAME	PRUS	NO	CREATION	USERID	FILE STATUS
FL3550TE	1499	0	04/06/81 D	DBSCOM	DSK W/TAPE

and input:

FIND FL3550PE

Response:

PERM. FILE NAME	PRUS	NO	CREATION	USERID	FILE STATUS
FL3550PE	032	0		DBSCOM	TAPE

NOTE: These data files (FL3550TE and FL3550PE) are known to exist from INTERACTIVE use of the Data Bank information file, described in Appendix E.

The FIND command creates a temporary user file directory called MINIDIR. Each additional FIND command adds directory information to this file. To review the MINIDIR, do the following:

Input:

REVIEW MINIDIR

Response:

PERM. FILE NAME	PRUS	NO	CREATION	USERID	FILE STATUS
FL3550TE	1499	0	04/06/81 D	DBSCOM	DSK W/TAPE
FL3550PE	032	0		DBSCOM	TAPE

NOTE: If the same FIND command is input twice, the data file will be duplicated in the MINIDIR.

The MINIDIR may be erased by

Input:

RTN MINIDIR

Multiple data files may be located by using a mask type of input command. This mask is created by enclosing any part of the data file name in parentheses or by using ampersands (&&&).

Sample input:

FIND (FL3550) or FIND FL3550&&

Response:

PERM. FILE NAME	PRUS	NO	CREATION		USERID	FILE STATUS
FL3550FU	052	0			DBSCOM	TAPE
FL3550KW	052	0			DBSCOM	TAPE
FL3550PD	145	0			DBSCOM	TAPE
FL3550PE	032	0			DBSCOM	TAPE
FL3550TE	1499	0	04/06/81	D	DBSCOM	DSK W/TAPE

5.3 Acquiring the Located Data

The GET command has two functions. It will either restore (copy) data files from tape to disk or attach data on disk to the user's terminal. This command in either case must be preceded by the FIND command.

To restore one or more data files from tape, do the following:

Input:

GET FL3550PE

Response:

PERM FILE NAME	OPERATION
FL3550PE	REQUESTED FROM TAPE

This response indicates that a BATCH job has been created to request the data from the computer tape library. There will be a time interval (15 minutes to several hours, depending upon comp ter load) before the data will be available on disk. Allowing overnight turnaround eliminates an unproductive waiting period. Additional file requests may be added to this job as long as the user is in SEARCH. The job is submitted upon the RETURN to MASTER.

To attach a data file that is already on disk, the command sequence is

Input:

GET FL3550TE

Response:

PERM FILE NAME	OPERATION
FL3550TE	ATTACHED AS 'CWAF '

The standard ISDMS data format is the Common Word Addressable File (CWAF) format. In SEARCH, each data file is assigned a local file number (CWAF through CWAF9). The GET command will attach the first file requested as CWAF (or 0).

5.4 Determining Data File Contents in SEARCH

To list the information in the data file directory of the file attached in Section 5.3, do the following:

Input:

SUMMARY 0

Partial response:

**** SUMMARY ****

FL3550TE ..... DBSCOM 001

SEQ NO	IDENTIFIER	REC	E/U	POINTS	KEYWORD(S)
000001	TIME		077	000428	
000002	6J-1		034	000428	
000003	9G-1		034	000428	

This data file directory listing is described in Appendix G.

NOTE: A second FIND and GET command will attach a data file as CWAF1 and the resultant SUMMARY command would be SUMMARY 1.

5.5 Returning Data Files in SEARCH

Up to 10 data files (CWAF0 through 9) may be attached in SEARCH. The attached data file will be returned by

RTN CWAF

5.6 Returning to MASTER from SEARCH

To return to MASTER from SEARCH,

Input:

RETURN

Response:

COMMAND ...

NOTE: The MINIDIR that was created, or any data files attached, will remain until the user types in LOGOUT at the end of the terminal session.

6. MAGNUM

MAGNUM, the interactive graphics processor, is entered from MASTER with

Input:

MAGNUM

Response:

MAGNUM 1.2 (IDAHO NATIONAL ENGINEERING LABORATORY)

TIME
DATE

As in the case with other processors, entering HELP will produce a listing of valid commands and further input will produce an abbreviated description of the specified command. MAGNUM documentation contains much more detailed command descriptions.

6.1 ATTACHing Data Files in MAGNUM

The data file *must* be on disk. If the file has not been restored from tape in SEARCH, an error message will result.

Sample input:

ATTACH CWAF FL3550TE DBSCOM

CWAF, which is the ISDMS data format, must be specified because MAGNUM will recognize other data formats. Also, up to six data files may be attached at one time.

NOTE: This command performs the same function as the GET command in SEARCH. The ATTACH command may also be used for a user created data file (see Section 6.23).

6.2 Determining Data File Contents

In MAGNUM, the SUMMARY command, which lists data file contents, must be preceded by the ATTACH command described in Section 6.1.

Sample input:

SUMMARY 1

Partial response:

** SUMMARY **

**FL3550TE* ** DBSCOM* ** 001*

CHANNEL NO	IDENTIFIER	RECD	E/U	POINTS	KEYWORD(S)
000001	TIME		077	000428	
000002	6J-1		034	000428	
000003	9G-1		034	000428	
000004	11E-1		034	000428	
000005	5H-2		034	000428	
000006	8N-2		034	000428	
000007	8K-2		034	000428	
000008	6J-3-3		034	000428	
000009	9G-3-3		034	000428	
000010	11G-3-3		034	000428	
000011	2H-4		034	000428	
000012	5H-4		034	000428	
000013	5J-4		034	000428	
000014	8H-4		034	000428	
000015	8K-4		034	000428	

This same data file directory listing was demonstrated in SEARCH and is described in Appendix G.

NOTE: Difference in MAGNUM local file name (LFN) conventions. MAGNUM begins with CWAF1 and SEARCH begins with CWAF0. If, however, this data file had been attached with the GET command in SEARCH, the SUMMARY command within either processor (SEARCH or MAGNUM) would be SUMMARY 0.

6.3 Selecting Data on the ATTACHed Data File

The data channel identifiers listed in Appendix G reflect the measurement identifiers assigned by the individual test facility. Therefore, a data report may be required to interpret the data channels correctly. Individual data report references may be determined by using the Data Bank information file (Appendix G).

Data may be located on the data file by several methods. Using the data file listing in Section 6.2, two of these methods are illustrated through

Input command—based on sequence number (SEQ NO):

FINDC 1 2 or CHAN 1 2

Response:

**** 6J-1* *LOCATED, LFN 1, WA FILE PTR 01*

Input command—based on IDENTIFIER

FIND 1 "6J-1"

Response:

**** 6J-1 LOCATED, LFN 1, WA FILE PTR 02*

In both cases, the same data have been located. The local data file number (1, in this example) must be identified with each FIND command.

NOTE: If the data file had been ATTACHed in SEARCH, the FINDC command would have been FINDC 0 2.

Some data reports identify their data channels by numbers. These data sources are identified by the record parameter (REC NO). When data are identified by record number, a third type of command is

Input command—based on record number (REC NO)

FIND 1 (REC NO)

6.4 Listing the Record Table

Each FIND command results in the building of a user Record Table, and Word-Addressable-PoinTeR (WA FILE PTR) numbers are assigned to each data channel in the order of user selection. The WA FILE PTR numbers are used to identify the data to be plotted and calculated. The following command lists the Record Table created in Section 6.3.

Input:

STATUS R

Response:

** RECORD TABLE **

WA FILE PTR	LFN	REC NO	E/U	IDENTIFIER	ORG	PTS
01	1	0000	034	6J-1	CWAF	0428
02	1	0000	034	6J-1	CWAF	0428

**** ENTER C/E TO CONTINUE/END*

Input:

C

Response:

** RECORD TABLE CONTINUED **

WA FILE PTR	LFN	REC NO	XMIN	XMAX	YMIN	YMAX
01	1	0000	-2.716E+02	1.510E+02	2.608E+02	3.006E+02
02	1	0000	-2.716E+02	1.510E+02	2.608E+02	3.006E+02

NUMBER OF ACTIVE RECORDS ... 02

6.5 DISCARDing the Record Table

When the user leaves MAGNUM, the user-constructed Record Table will automatically be destroyed. However, the following command may also be

Input:

DISCARD

Response:

****** WARNING - WA FILE RESET, ALL POINTERS DESTROYED***
****** WARNING - ALL KEYWORD INFORMATION DESTROYED***

CAUTION: This command will destroy all WA FILE PTRs, including any resulting from MATH calculations (see Section 6.18).

6.6 FINDing Multiple Data Channels

Up to six data channels may be identified with each FIND command (see Section 6.3). The following command will locate three data channels on the data file illustrated in Section 6.2. The WA FILE PTRs assigned are based on *command input sequence* and *not* on the order in which the data appear on the data file.

Input:

FIND,C 1 11 7 15 or CHAN 1 11 7 15

Response:

****** 2H-4 LOCATED, LFN 1, WA FILE PTR 01***

****** 8K-2 LOCATED, LFN 1, WA FILE PTR 02***

****** 8K-4 LOCATED, LFN 1, WA FILE PTR 03***

6.7 Plotting (Single Channel)

NOTE: TEKTRONIX PLOT-10 capabilities are required to obtain plots interactively.

WA FILE PTR numbers are used to identify which data are to be plotted. The WA FILE PTR numbers used in the subsequent plotting sections are the result of the multiple channel FIND command illustrated in Section 6.6.

The following minimum input identifies which data (by WA FILE PTR number) are to be plotted. The plot labels, assigned by MAGNUM, are based on the E/U code (Appendix H).

Input:

PLOT 3

Response (see Figure 3).

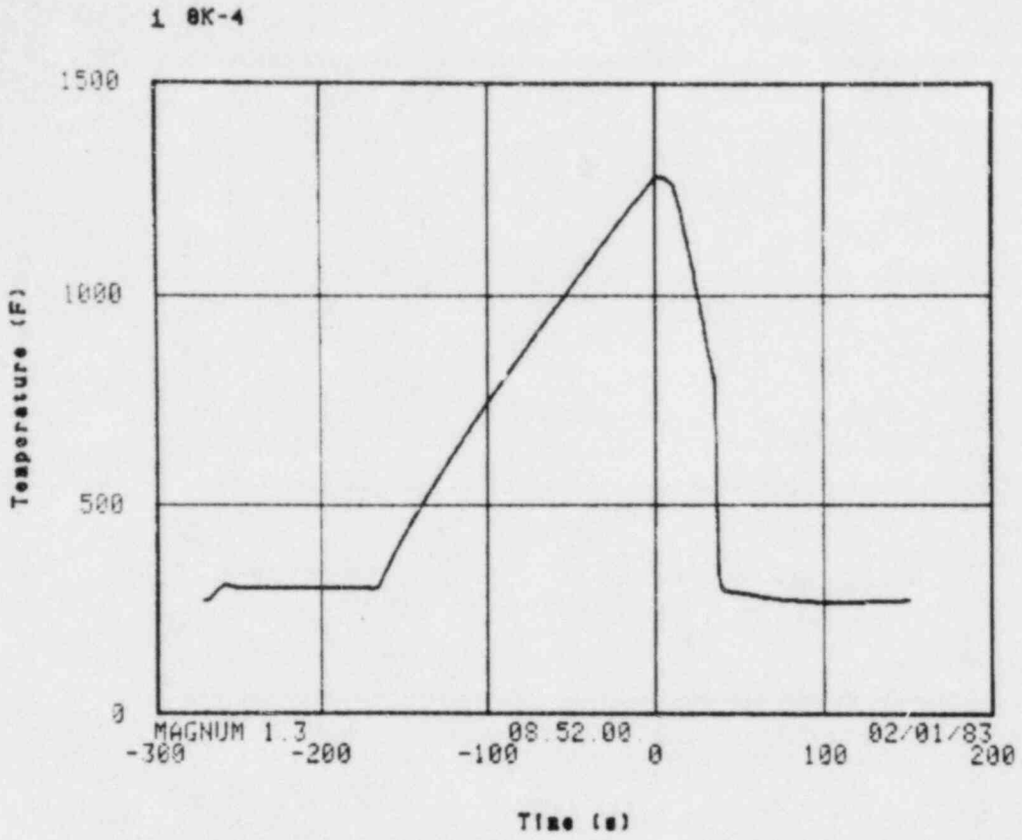

Figure 3. Sample minimum command plot.

IMPORTANT: A bell sound will be heard, ending the plotting sequence. A hard copy unit and appropriate terminal command may then be used to produce a paper copy of the plot. Touching the space bar and the RETURN key will clear the screen and return the user to READY mode.

6.8 Plotting (Multiple Channels)

The following command will produce an overlay plot using WA FILE PTRs 02 and 03 from Section 6.6. An example is shown in Figure 4. The labeled curve numbers (1 and 2) are based on the PLOT input sequence and *not* on WA FILE PTR numbers.

Input:

PLOT 2 3

CAUTION: The Y axis label is derived from the E/U code of the first WA FILE PTR in the PLOT input sequence. A comparison of E/U codes should be made to ensure consistency in overlay plots.

6.9 Plotting (Parameter versus Parameter)

The following command will plot WA FILE PTR numbers 03 and 02 on the X and Y axes, respectively. Reversing the input PLOT numbers will reverse the X and Y coordinates.

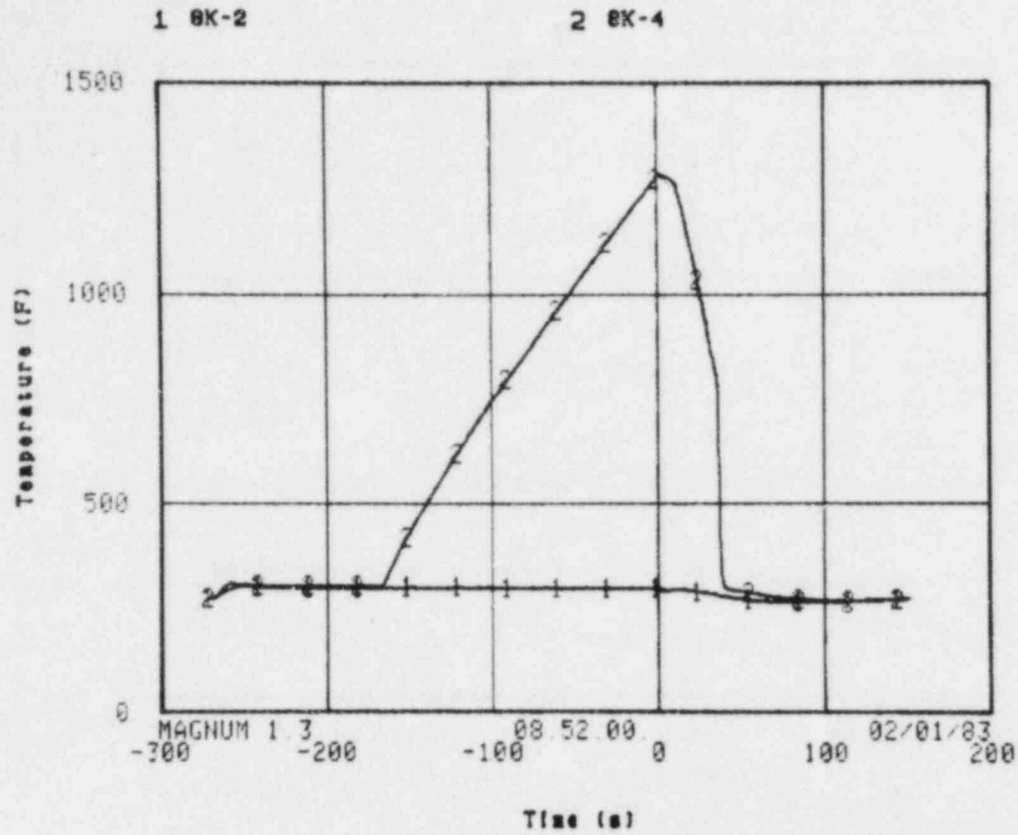

Figure 4. Sample overlay plot.

Input:

POINTS 1

PLOT 3 VS 2

The POINTS command eliminates lines connecting data points on the curve.

CAUTION: For accurate parameter versus parameter plots, the start times and the data sampling rates must be the same. This consistency may be examined by consulting the Record Table (Section 4.4). If there is a discrepancy, see Section 6.20.

6.10 Secondary Axes

Two plot commands are required to add a secondary axis and label to a plot. Using WA FILE PTR Numbers 02 and 03 (see Section 6.6), the first command labels the left (primary) axis and the second labels the right (secondary) axis, with

Input:

PLOT1 2

PLOT2 3

6.11 Changing Axes Ranges

Axis limit parameter commands are XMAX, XMIN, YMAX, and YMIN. Any of the axes may be changed. The following command will alter the X axis for data plotted in Figure 3 (see Section 6.7).

Input:

XMIN 0.

This number must be floating point format (have a decimal point).

Input:

PLOT 3

Figure 5 shows the result of these 2 input commands.

IMPORTANT: Once plot parameters have been altered, they will be used in subsequent plots until they are changed or FLUSHed (see Section 6.16).

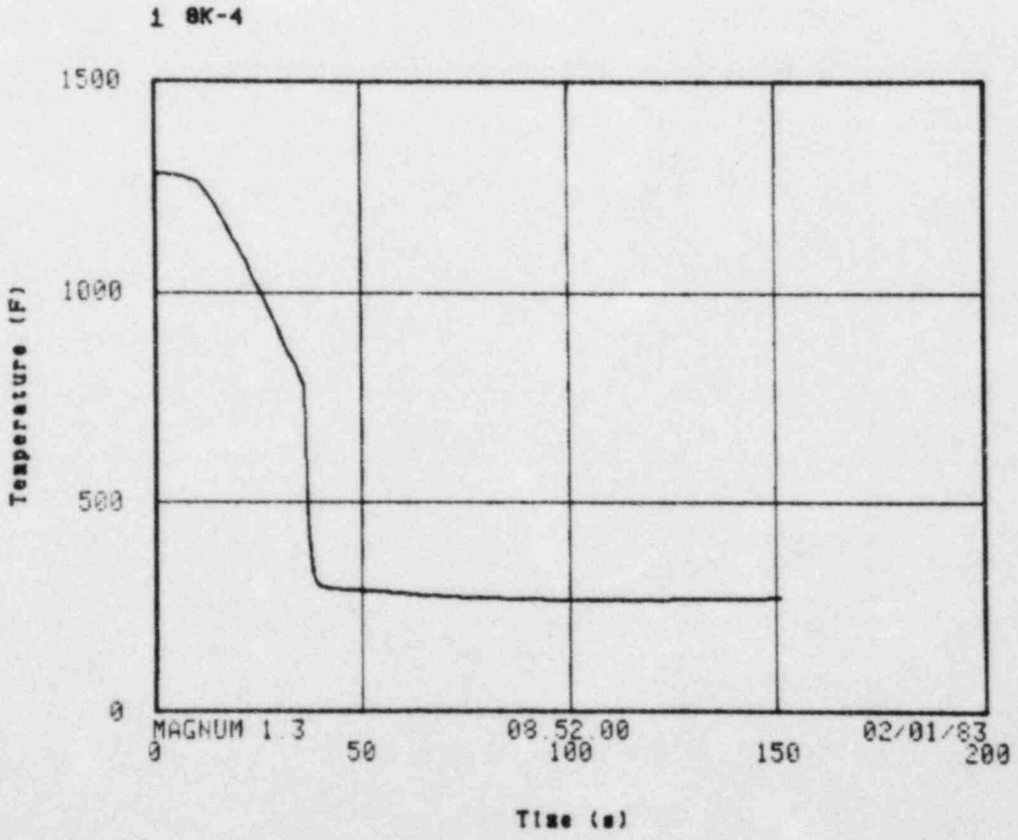

Figure 5. Example plot in which X-axis range has been changed.

6.12 Changing Plot Labels

The default labels for the Y and X axes are the E/U code label and time, respectively. These labels may be changed (XLABEL or YLABEL for primary axes, and XLABEL2 or YLABEL2 for secondary axes), or characters may be added (BLABEL1 and BLABEL2 for bottom labeling). These modifications are further demonstrated in Appendix I.

After using the appropriate label command, the label itself (up to 40 characters) is enclosed in quotes. This label will remain in subsequent plots until changed or FLUSHed (see Section 6.16).

Sample input:

```
BLABEL1 "SAMPLE PLOT"

YLABEL "USER Y LABEL"

PLOT 3
```

The resultant plot with these label changes is shown in Figure 6.

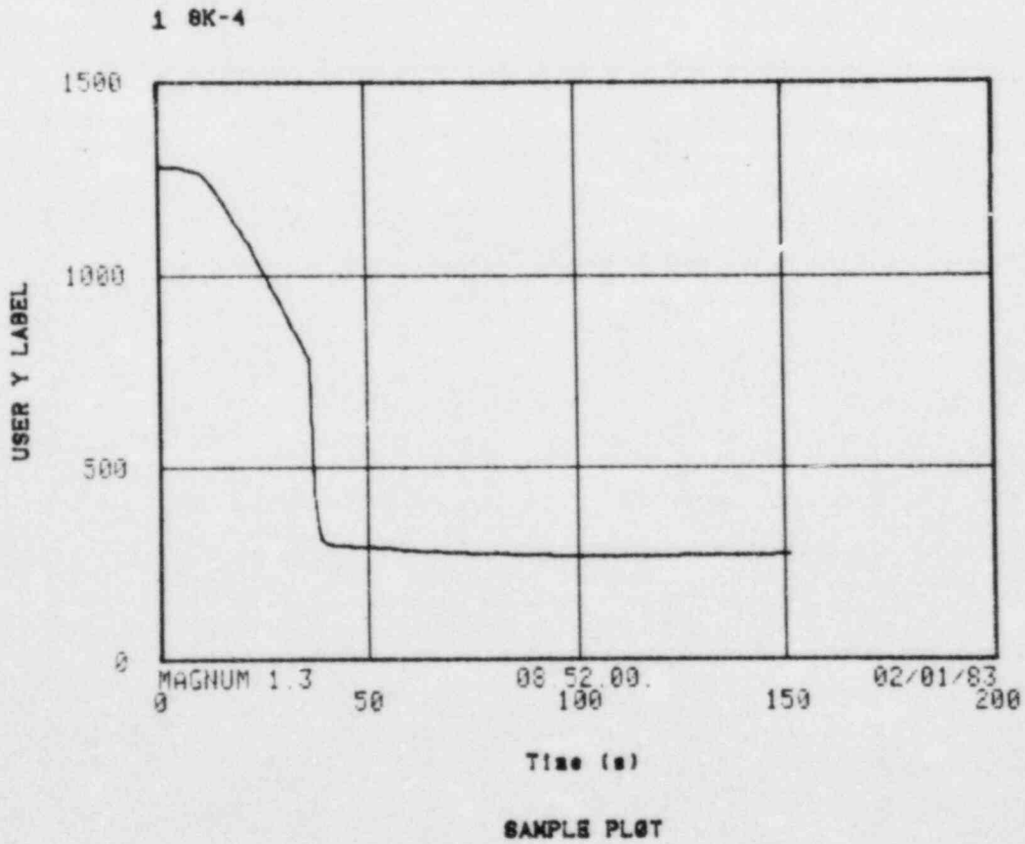

Figure 6. Sample data plot in which user specifies Y-axis label.

6.13 ROUTEing Plot Files and Film

A plot may be viewed on the terminal screen, a hard copy may be generated, and plots may be output on 35-mm black and white film, to 35-mm color film or to the Versatec printer. Film plots are produced using DIVERT (and REVERT) and ROUTE commands. The plot generated in Section 6.12 (Figure 6) is produced on black and white film using

Input:

DIVERT

P 3

ROUTE PT

Response:

****** 0001 FRAME(S) OF FILM ROUTED WITH FID–UIDXXXX***

Input:

REVERT

When the DIVERT command is in effect, each subsequent plot command causes the plot to be added to the plot file not displayed on the terminal screen. When REVERT is entered, the subsequent plots will be viewed on the screen and not written on the plot file. This procedure allows the user to switch back and forth between modes. The ROUTE command submits the plot file (containing any number of plots) to be processed.

NOTE: Color commands (even with a noncolor terminal) may be input (see MAGNUM documentation Z commands). Film color plots are then generated by a variation of the ROUTE command. The plot file created may NOT be a mixture of color and black and white plots.

6.14 Other Plot Options

MAGNUM contains additional plot commands including such options as GRID, NOGRID, POINTS, LOG, SYMBOL, TITLE, etc. Appendix I demonstrates a few of these additional options.

6.15 REVIEWing Plot Commands

Input plot options may be reviewed with

Input:

REVIEW

6.16 Resetting Plot Commands

Once plot options have been specified, they remain in effect until they are changed or FLUSHed. The following commands will remove the previous input commands described in Sections 6.11 and 6.12.

FLUSH XMIN
FLUSH BLABEL1
YLABEL 1

NOTE: The 1 specifies the Y-axis label to be supplied by the E/U code.

6.17 Returning Data Files

Up to six data files may be simultaneously ATTACHed (see Section 6.1) in MAGNUM. If more than six are needed, files may be returned. Using the data file ATTACHed in Section 6.1, the command is

Input:

UNLOAD 1

Response:

****** FOLLOWING FILE UNLOADED ...***

LFN = CWAF1
PFN = FL3550TE
ID = DBSCOM
CY = 001

NOTE: This command will not affect the existing RECORD TABLE created in Section 6.6.

6.18 Math Operations

Many simple calculations that affect entire channels of data may be performed using the MATH commands. These commands are briefly described here, and additional user options are presented in Section 10.

MATH operations are performed by LOADing the WA FILE PTR (see Section 6.6) into the computer storage buffer, performing the calculation, and SAVEing the resultant with a new WA FILE PTR number. The following series of the MATH commands will subtract one data channel from another.

Input and responses:

LOAD 2

****** LOAD OPERATION COMPLETE***

SUB 3

****** SUB OPERATION COMPLETE***

SAVE

****** SAVE OPERATION COMPLETE, WA FILE PTR 04***

CAUTION: For accuracy, the start time and time intervals must be the same. If they are not, see Section 6.20.

NOTE: The input for WA FILE PTR 03 is an integer three. If the command had been

SUB 3. (floating point format)

a numerical value of 3 would have been subtracted from every data point for WA FILE PTR 02.

Although simple calculations may be performed in MAGNUM, more complex calculations, examination of individual data points, and use of numerous data channels require user-developed programs. The processor EXPERT (see Section 10.1) is designed to accommodate these types of problems and may be used INTERACTIVEly or in BATCH (see Section 9) mode.

6.19 Changing Engineering Unit Codes for New Parameters

After a MATH operation has been performed (see Section 6.18), the IDENTIFIER name assigned to the resultant data channel is MATH, seen in the listing of the Record Table.

Input:

STATUS R

Response:

**** RECORD TABLE ****

WA FILE PTR	LFN	REC NO	E/U	IDENTIFIER		ORG	PTS
01	1	0000	034	2H-4		CWAF	0428
02	1	0000	034	8K-2		CWAF	0428
03	1	0000	034	8K-4		CWAF	0428
04	0	0000	034	MATH	::::	MATH	0428

The resultant E/U code assigned may not adequately describe the calculation performed. A listing of engineering unit codes is given in Appendix H.

The following commands demonstrate two alteration commands that are used in conjunction with the MATH commands from Section 6.18.

Input and response:

LOAD 2

****** LOAD OPERATION COMPLETE***

SUB 3

****** SUB OPERATION COMPLETE***

IDENT "REC2-REC3"

****** IDENT OPERATION COMPLETE***

EUNIT 96

****** EUNIT OPERATION COMPLETE***

.SAVE

****** SAVE OPERATION COMPLETE, WA FILE PTR 04***

These changes may be verified by a listing of the Record Table.

**** RECORD TABLE ****

WA FILE PTR	*LFN*	*REC NO*	*E/U*	*IDENTIFIER*	*ORG*	*PTS*
01	*1*	*0000*	*034*	*2H-4*	*CWAF*	*0428*
02	*1*	*0000*	*034*	*8K-2*	*CWAF*	*0428*
03	*1*	*0000*	*034*	*8K-4*	*CWAF*	*0428*
04	*0*	*0000*	*096*	*REC2-REC3* ::::	*MATH*	*0428*

6.20 Metric/English Conversion for Plotting

Data stored in English units may be plotted in Metric units or Metric data may bc plotted in English units with

Input:

METRIC 1

or

ENGLISH 1 (where 1 is the WA FILE PTR)

Response:

****** WA FILE POINTER 01 CONVERSION COMPLETE***

These commands convert the data in the existing data file. Thus, no new WA FILE PTR ordinals are generated. This conversion is not permanent, but will remain in force until the WA FILE PTR is eliminated.

The original data are not affected.

6.21 Comparing Unequal Data Channels

A point by point comparison is occasionally required of two channels of data having different sampling rates. To perform this comparison, use the MATH command INTRP to perform a linear interpolation on one data channel. When more than two channels of data are involved, the use of the WIZARD processor's INTPOL command is advised. For further details, consult the MAGNUM and WIZARD documents.

6.22 LISTing Data Values

The LIST command uses WA FILE PTR values (see Section 6.5) and the MATH working buffer (Section 6.18).

Sample input and partial response:

LOAD 2

LIST

PTS	X	Y
0001	-2.71600E+02	2.73701E+02
0002	-2.70600E+02	2.74799E+02
0003	-2.69600E+02	2.74799E+02
0004	-2.68600E+02	2.73701E+02
0005	-2.67600E+02	2.74799E+02
0006	-2.66600E+02	2.76900E+02
0007	-2.65600E+02	2.81299E+02
0008	-2.64600E+02	2.84502E+02

6.23 How to KEEP and KATALOG User Data Files

Because of the significant cost of storing a large data file on disk, and because calculations may have been performed, a user-created data file may be used to store selected data. The following two commands create a Common-Word-Addressable-File (CWAF) permanent data file named MINE with a user ID of UID, where the UID is the individual user-assigned identification (see Appendix B). The KEEP numbers are WA FILE PTR values from Section 6.20.

Sample input and response:

KEEP 2 3 4

******KEEP OPERATION COMPLETE***

KATALOG MINE UID

CT ID= UID PFN=MINE
CT CY= 001 SN=PFSET 00002880 WORDS.

IMPORTANT: All CWAF data files created in MAGNUM must be stored using the KATALOG command. The other processors use the CATALOG command. If CATALOG is used for a CWAF file in MAGNUM, an error will result and no data will be stored.

6.24 Use of KATALOGed Data Files

The same ATTACH, SUMMARY, and FIND commands (see Sections 6.1-6.3) for Data Bank data files are also employed for user-created CWAF data files (see Section 6.22), except UID replaces DBSCOM.

Input:

ATTACH CWAF MINE UID

SUMMARY 1

Response:

**** SUMMARY ****

**** MINE*** **** UID*** **** 001***

CHANNEL NO	IDENTIFIER	RECD	E/U	POINTS	KEYWORD(S)
000001	X-AXIS		036	000428	
000002	8K-2	0001	034	000428	
000003	X-AXIS		036	000428	
000004	8K-4	0002	034	000428	
000005	X-AXIS		036	000428	
000006	REC2-REC3	0003	096	000428	

NOTE: Each data channel has its own time (X-axis) channel. If these time channels are the same, they may be combined into one channel using EXPERT (Section 10.1).

6.25 Creating User Data Files

With CREATE, X-Y data pairs are input. These pairs may be in either fixed or floating point format, and the X and Y input values must be separated by a space or a comma.

Sample input and response:

CREATE

****** ENTER END TO TERMINATE INPUT ...***

****** ENTER X AND Y : 1. 3.***
****** ENTER X AND Y : 1.5 6.***
****** ENTER X AND Y : 3. 9.***
****** ENTER X AND Y : 4. 12.***
****** ENTER X AND Y : END***

****** CREATE OPERATION COMPLETE, WA FILE PTR 01***

The following types of commands are used to change the X or Y or both data values using the MATH working buffer (Section 6.18). FIX options are discussed in the MAGNUM documentation.[3]

LOAD 1

******LOAD OPERATION COMPLETE***

FIX 2 X 2

******FIX OPERATION COMPLETE***

SAVE

******SAVE OPERATION COMPLETE, WA FILE PTR 02***

File IDENTIFIERs and E/U codes also may be incorporated. KEEP and KATALOG commands may then be used.

NOTE: If multiple data channels are to be CREATEd, EXPERT may be more efficient (Section 10.1).

6.26 Leaving MAGNUM (RETURN to MASTER)

To leave MAGNUM,

Input:

RETURN

Response:

COMMAND ...

6.27(A) Purging Data Files

When data files are KATALOGed in MAGNUM, they are assigned an infinite retention period on the computer system. Because of the large costs of storing user disks, these files should be purged. When they are no longer needed, purging is performed from the INTERCOM mode (Section 3.4). If the file is attached, the input command sequence is

Input:

PURGE,MINE

Response:

PR UID PFN=MINE
PR CY=001 SN=PFSET 0000000320 WORDS

If the file is not attached, the command sequence is

Input:

PURGE, PFN,ID=UID

Response:

PR UID PFN=MINE
PR CY=001 SN=PFSET 0000000320 WORDS

6.27(B) Purging Data Files

When the limited user desires to purge a permanent file, the sequence in MASTER is

COMMAND ...

PURGE PFN UID [CY] [PW]

NOTE: CY = cycle number, if applicable, otherwise the highest cycle is purged. PW is a password or passwords assigned by the user.

7. USER DATA FILES

Data files may be stored on disk or data tape, or both. Costs are assessed for storing data on disk or for restoring data from tape to disk. Whether the data are stored on tape or disk depends on the size of the data file and how often the data will be used. Disk storage costs for user files may be determined by typing the following command in MASTER

Input:

AUDIT UID

where UID is the user identification under which the data files have been cataloged.

The procedure for creating user data files is described in Section 6.24, using the KATALOG command. However, files may also be created in other processors using the CATALOG command.

Data on disk may be copied to tape for future use. These jobs are executed in the BATCH mode (see Section 9). Further explanations and command descriptions may be obtained from BACKUP and RESTORE documentation.

8. ITERATIVE INTERACTIVE PROCESSING

The beginning Data Bank user will be mainly concerned with locating test data and plotting it. When this plotting is performed frequently, however, it is more efficient to automate the command series input. The following sections assume a general understanding of ISDMS and INEL computer terminology.

In the INTERACTIVE mode, user presence at the terminal can be minimized with user constructed command files called MACROs, which contain a series of INTERACTIVEly executable ISDMS commands. One MACRO command initiates a series of ISDMS commands. This feature is especially useful when the rapid turnaround of INTERACTIVE processing is combined with an iterative series of commands.

8.1 MACRO Structure

Not all of the MACRO commands are described in this manual. A more complete description may be found in documentation for the individual Processors.

Appendix I illustrates the format of a MACRO in MAGNUM. The user command file may contain one or more MACROs. Each MACRO, if created by way of a text editor such as SENATOR or EDITOR, must *begin* with *name. This name may be alphanumeric, but must begin with a letter and be no more than seven characters in length.

MACROs may be created using one of several methods (see Section 8.2).

Sample format

```
*NAME1
ISDMS commands
END
*NAME2
ISDMS commands
```

NOTE: *NAME1 and *NAME2 *must* begin in input column 1.

Execution of a MACRO is initiated by typing in MACRUN name where the name corresponds to the starred name. To execute the MACRO in Appendix I, input would be

MACRUN STATZ

MACRO execution may be initiated and terminated anywhere within ISDMS. For example, STATZ begins in MASTER, enters MAGNUM, and RETURNs to MASTER (see Appendix I). The beginning and end points need not be in the same processor.

STATZ was designed to generate MAGNUM plots. The HCOPY command, and a hard copy unit attachment, will generate a paper copy of each plot. With the exception of STATZ, HCOPY, and END the input ISDMS commands are the same as if the user had typed them INTERACTIVEly. By using this MACRO, the need for user presence at the terminal is significantly decreased, especially if these plots are generated repetitively.

8.2 How to Create and Execute a MACRO

The MACRO program STATZ (see Appendix I) could have been created and subsequently executed using any of the following options.

1. Using ISDMS and MACDEF command.

   Input:

   LOGIN Sequence (see Appendix C)

   BEGIN,MASTER (unlimited users only)
   MACDEF
   ****STATZ***

   ISDMS commands

   END
   MACRUN STATZ

This method, however, has no editing capabilities and any input error will necessitate reentry of the entire set of MACRO commands.

NOTE: By using the MACDEF command, the MACRO that is created is assigned a temporary LFN name, MACROSC.

2(A). Using EDITOR or SENATOR

   Using EDITOR, input:

   LOGIN Sequence (see Appendix C)

   EDITOR
   CREATE
   ****STATZ***

   ISDMS commands

   =
   SAVE,MACROC,N
   BYE
   BEGIN,MASTER
   MACLOD
   MACRUN STATZ

   Using SENATOR, input:

   LOGIN Sequence (see Appendix C)

   SENATOR
   END
   INPUT
   ****STATZ***

   ISDMS commands

   SAVE,MACROC
   BYE
   BEGIN,MASTER
   MACLOD
   MACRUN STATZ

2(B). Using SENATOR--The version of senator available to the limited user has the restriction of only being able to attach files cataloged with an ID of DBSCOM (Data Bank) or the user's ID, and may only catalog files under the user's !D.

Input:

LOGIN Sequence

SENATOR (this is the restricted version)
END
INPUT
****STATZ***
SAVE,MACROC
BYE
MACLOD
MACRUN STATZ

These INTERACTIVE programs allow the user to create and edit programs or data or both. These programs are referenced in the INEL CYBER Users Guide.[1]

8.3 Cataloging a MACRO

In the following commands, the permanent file name is user-defined and stored with the user ID. In ISDMS

Input:

MACCAT NAME UID

NOTE: Once the MACCAT command has been executed, the cataloged file cannot be used again until the MACGET and MACCPY commands are executed (see Section 8.4).

Using SENATOR (see Section 8.2):

Input:

SAVE, NAME
CAT

Using EDITOR (not available to limited users)

Input:

SAVE,NAME,N
CATALOG,NAME,ID =UID,RP =999.

A MACRO cataloged in SENATOR or EDITOR is not in a format that can be used in ISDMS; and conversely, a MACRO cataloged with a MACCAT command is not in a format that is recognized by EDITOR or SENATOR. However, in ISDMS, a MACROSC may be converted to a format recognized by EDITOR or SENATOR by the command MACDMP. The resultant name of this local file is MACROC.

8.4 How to Attach and Execute a Cataloged MACRO

The following commands use files cataloged in the previous section.

8.4.1 Using MACRO Cataloged in ISDMS

LOGIN Sequence (see Appendix C)

BEGIN MASTER (unlimited users only)
MACGET NAME UID
MACCPY STATZ
MACRUN STATZ

8.4.2(A) Using MACRO Cataloged in EDITOR or SENATOR (Unlimited User)

LOGIN Sequence (see Appendix C)

ATTACH,MACROC,NAME,ID =UID
BEGIN,MASTER
MACLOD
MACRUN STATZ

8.4.2(B) Using MACRO Cataloged in SENATOR (Limited User)

LOGIN Sequence
SENATOR
GET,NAME . DATA
SAVE MACROC
BYE
MACLOD
MACRUN,STATE

9(A). BATCH JOBS

BATCH processing is only available to the unlimited user. There are several advantages to running jobs in the BATCH mode.

1. The job cost is less. INTERACTIVE processing is done at priority 3, whereas in BATCH priority 1 or 2 may be selected. Also, there is no charge for terminal connect time.

2. Jobs with long execution times do not occupy a terminal during execution.

3. Terminal user attendance is not required.

4. Jobs may be submitted in the evening for overnight processing to help equalize the computer work load.

5. Input may be stored as permanent files for repetitive runs (additional runs requiring only minor changes).

The BATCH mode must be used for any job requiring magnetic tape or producing graphics plots (the ISDMS processor QKPLTD) Section 10.4.

9.1(A) BATCH Job Structure

BATCH and INTERACTIVE processing use the same ISDMS commands. BATCH jobs, however, are complete within themselves from the equivalent of LOGIN to LOGOUT. Imbedded errors may cause command steps to be skipped or the complete job to abort.

Each BATCH job contains two types of commands, CYBER Control Language (CCL) and ISDMS commands, separated by an end of record (*EOR) flag. The CCL commands replace the LOGIN sequence and initiate processing into MASTER. A typical CCL sequence is

Line 1 (Job Card)

UIDXX,P1,T17,PE1.

where UIDXX is the user ID with two optional job identifier characters, and

P1 Specifies Priority 1 which is the lowest and least expensive, usually good for very long jobs or for overnight processing

or

P2 Specifies highest and more expensive priority, used for fast turnaround or short jobs

T17 Number of Central Processor (CP) seconds estimated to complete the processing is an octal number (T17 octal = 15 decimal seconds)

PE1 Number of tape drives required for this job (necessary for BACKUP and RESTORE); entry is not specified if tape drives are not required

options are

HD	800 Bits Per Inch (BPI) packing density
PE	1600 BPI (most common)
GE	6250 BPI

It should be noted that CCL commands are separated by commas, and each line, or sequence, is ended with a period.

Line 2 (Account Card)

ACCNT,XXX C = NNNNNNNNN,B = LLL.

where

ACCNT Required card identifier

XXX User ID

NNNNNNNNN Charge number; the cost of the job and any cataloged files will use this charge number

LLL Output location; EXT for offsite users.

Line 3 (Program card)

BEGIN,MASTER.

where

BEGIN MASTER is the same as used INTERACTIVEly. The period is required.

Line 4 (End of Record)

****EOR*** (Do not end this line with a period.)

The ISDMS commands are identical to those used INTERACTIVEly. Commas or spaces may be used as delimiters and periods are not used to terminate the lines.

9.2(A) Submitting BATCH Jobs

BATCH jobs are submitted to the computer in the INTERACTIVE mode as local files (LFN). The input command sequence will determine the disposition of the job's printed output (P/O).

If the command is

BATCH,LFN,INPUT

the job will execute to completion and the P/O sent to the location (LOC) specified on the Account Card. If, however, the input command is

BATCH,LFN,INPUT, MINE

the job will execute only to the point where the P/O file is created. This P/O file is then held in the Output queue for further processing by the job originator.

9.3(A) Determining the Status of a BATCH Job

When a BATCH job has been input with the mine command, the user can determine its status with

Input:

FILES

The computer will respond with a list of all the local files that are attached, and the location of any BATCH jobs (input queue, output queue, or execute queue). BATCH jobs are identified by a seven-character name with the first five characters taken from the Job Card and the last two characters assigned by the computer.

9.4(A) Disposition of P/O in the Output Queue

When the P/O from a BATCH job is in the Output queue, there are several ways to process it.

1. If the P/O is not required, the input ***EVICT, UIDXXYY*** *(UIDXXYY* is the seven-character job name) will erase the file.

2. If the P/O is to be printed without review, the input

   DIVERT,YY

   will route the file directly to the computer printer.

3. If the P/O is to be reviewed, it must be attached as a local file; input

   BATCH,UIDXXYY,LOCAL

   will attach the file.

After the job has been attached to the terminal, it may be reviewed with the PAGE command. The following input sequence and response (in parentheses) will display the P/O.

PAGE,UIDXXYY

(READY)

$24

(READY)

100

The terminal will display 24 lines of P/O starting with line 100.

(Line 100)

+

The terminal will display 24 additional lines of P/O starting with line 125.

(Line 125)

END

Some of the PAGE commands are

$nn	(optional) displays nn lines of P/O, default is 11 lines.
+	displays the next group of P/O
-	displays the previous group of P/O
*	moves the display to the next End of File (EOF)
nn	starts display at line nn
END	ends PAGE and returns the user to previous status (COMMAND-)

When P/O review is complete, the user may discard the P/O with

DISCARD,UIDXXYY

or route the P/O file to the computer printer by using

BATCH,UIDXXYY,PRINT,UID

9(B). BATCH JOBS

BATCH processing is not available to limited users.

10. OTHER FREQUENTLY USED ISDMS PROCESSORS

This section briefly describes several ISDMS processors and their uses. Detailed instruction in their use may be found in the ISDMS documentation. Some examples of their use are shown in the appendices.

10.1 EXPERT

EXPERT permits the user to easily create a large variety of FORTRAN-like programs for mathematical data manipulation.

10.2 MUX/DEMUX

This program groups together (multiplex) or separates (demultiplex) multiple data channels, as required for specific processing applications.

10.3 WIZARD

WIZARD is a group of subprocessors with limited input/output flexibility, written to perform specific, repetitive data processing tasks.

10.4(A) QKPLTD

A generalized BATCH graphics program with limited mathematical and formatting capabilities. Output is film in either color or black and white.

10.4(B) QKPLTD

QKPLTD is not available to limited users.

10.5 COMEDIT

COMEDIT is designed to add, modify, or delete alphanumeric or numeric data under keyword directories or modify file directory information.

10.6 MERGE

A processor used to either combine multiple CWAF files into one, or to extract selected information from large files. (An example session is shown in Appendix J.)

11. CONCLUSIONS

This manual has introduced only a few of the many data processing capabilities available to the Data Bank user. By using the DOCS command (see Section 4.6), the user may obtain information about other options. The data displayed with the document name allow the user to obtain the most current documentation. Users outside the INEL will be sent any of these DOCS requests.

Any questions or problems should be addressed to the Data Bank Administration (see Section 2.7). The Data Bank exists to provide strong support to the nuclear industry. User input is needed to improve and provide effective Data Bank programs for the NRC and the nuclear community.

12. REFERENCES

1. J. L. Ivey et al., *INEL CYBER User's Guide*, EGG-IS-5138, Revision 1, March 1982.

2. K. D. Russell and H. R. Bruestle, *ISDMS 1.2-A Scientific Data Management System*, EGG-IS-5528, August 1981.

3. H. R. Bruestle, *MAGNUM 1.2-An ISDMS Interactive Graphics Processor*, EGG-IS-5528, August 1981.

APPENDIX A

NRC/DAE DATA BANK CONTENTS

APPENDIX A

NRC/DOE DATA BANK CONTENTS

EXPERIMENTAL DATA FACILITY	TEST IDENTIFICATION	
ARGONNE STEAM COOLING DATA	Heat Transfer Data	
BNL VOID FRACTION DATA	Heat Transfer Data	
BROWNS FERRY	1 Pump Trip Load Rejection	2 Pump Trip Feedwater Trip
CONDIE TUBE DATA (INEL)	Heat Transfer Data	
EPRI-B&W	Pump Characteristics 1/3 Scale Air-Water Tests	
EPRI-CE	Pump Characteristics 1/5 Scale Pump	
FEBA (KARLSRUHE)	1210	1214	1218
	1219	1220	1221
	1222	1223	1227
	2228	2229	2230
	2231	2233	2234
	3235	3237	3238
	3239	3240	3241
	3242	3243	3261
	4262	4263	4264
	4266	4267	4268
	4269	4270	4272
	4273	7321	7322
	7324	7325	7327
	7329	7330	8333
	8334	8336	8337
	8338	8340	8341
	8342		

FIST (GE) (a)	4-PMC-1	6-PMC-2A	6-DB1
	6-DB1-B	6-MSB-1	6-NC-14
	6-PMC-1	6-PMC-2	6-SB-1
	6-SB-2	6-SB-2B	6-SB-2C
	6-NC-11A	6-NC-12B	6-NC-13
	6-NC-15	6-NC-16	
FLECHT-COSINE	00233	00606	00801
	00904	01445	01545
	01812	01907	02005
	02223	02326	02414
	02502	02603	02833
	02928	03113	03325
	03447	03610	03709
	03811	03946	04019
	04220	04444	04516
	04641	04748	04831
	04930	05029	05132
	05239	05342	05543
	05636	05715	05821
	05917	06161	06218
	06357	06458	06559
	06749	06850	07151
	07252	07354	07455
	07631	07729	07836
	07934	08037	08131
	08262	08363	08464
	08565	08666	
FLECHT-SEASET 161 Rod Bundle	30223	30323	30518
	30619	30817	30921
	31021	31108	31203
	31302	31504	31615
	31701	31805	31922
	32013	32114	32235
	32333	32452	32652
	32753	32854	32955
	33056	33338	33436
	33544	33644	33749
	33849	33903	34006
	34103	34209	34316
	34420	34524	34610
	34711	34815	34907
	35050	35557	35759

(a) Proprietary Data: Available only to authorized users.

	35807	35912	36026
	36160	36261	36362
	36463	36564	36665
	36766	36867	37069
	37170		

FLECHT 21 ROD BUNDLE	41008E	41206E	41305E
	41509F	41515E	41608F
	41612E	41709B	41711F
	41731C	41807F	41808B
	41808D	41831C	41907B
	41909C	41914F	42006F
	42008C	42014D	42014E
	42015F	42105B	42105F
	42107C	42108A	42204F
	42206D	42207A	42215E
	42215F	42305D	42306B
	42314C	42315E	42404D
	42413C	42415B	42415E
	42430A	42506C	42509E
	42512D	42605C	42606A
	42612F	42615C	42704E
	42705A	42711B	42711D
	42711F	42804A	42804C
	42810B	42810F	42907A
	42912C	42915B	42915F
	43009D	43013A	43104F
	43110C	43112A	43208A
	43211C	43215D	43333F
	43412B	43431C	43432F
	43511A	43513B	43531C
	43534F	43610A	43616E
	43631F	43715A	43716C
	43717B	43813D	43816B
	43817C	43817E	43915F
	43916A	44116D	44117A
	44317D		

FLECHT-SKEWED	11003	13404	13609
	13914	14230	14331
	14548	14647	14935
	15034	15937	16022
	16110	16340	16543
	16642		

FLECHT-163 ROD BUNDLE	60701	60802	60902
	61005	61106	61208

	61314	61412	61509
	61607	61705	61810
	61916	62015	62117
	62211	62304	62413
	62503	62605	62819
	62919	63018	
FLECHT	9077		
G2 CORE UNCOVERY	715	716	717
	718	719	720
	721	722	723
	724	725	726
	727	728	729
	730	731	732
	733	734	735
	736		
GOETA (STJDSVIK) (a)	0122	0342	0416
	0517	1229	2128
	2226	3058	7800
HALDEN IFA 511.2	4693	4694	4695
	4696	4697	4698
	4711	4712	4714
	5233	5234	5235
	5236	5237	5238
	5239	5240	5241
	5242	5243	5244
	5245	5246	5247
HALDEN IFA 511.3	5253	5254	5255
	5256	5257	5258
	5259	5260	5261
	5262	5263	5264
	5265	5266	5267
	6023	6024	6025
	6026	6027	6028

(a) Proprietary Data: Available only to authorized users.

	6029	6030	6031
	6032	6033	6034
	6035		

INEL FUEL CODE ASSESS-MENT DATA BASE	Steady-state Fuel Behavior Data

2D/3D (JAERI) (a)	C1 Run 10	C1 Run 13	
	C1 Run 11	C1 Run 14	
	C1 Run 12	C1 Run 15	
	C2-A1	C2-H1	
	S1-SH1 Run 505	S1-01 Run 507	
	S1-02 Run 508	S1-03 Run 509	
	S1-04 Run 510	S1-05 Run 511	
	S1-06 Run 512	S1-07 Run 513	
	S1-08 Run 513	S1-09	
	S1-10	S1-11	
	S1-SH2 Run 506		
	MTD515		

KUOSHENG (a)	MT1	MT2	MT10
	MT11	MT12	MT20
	MT21	MT30	MT31
	MT32	MT33	MT40
	MT41	MT42	MT50
	MT51	MT52	MT60
	MT61	MT62	MT70
	MT71	MT72	MT80
	MT81	MT82	MT100A
	MT100B	MT100C	MT100X
	MT101A	MT101B	MT101C
	MT102A	MT102B	MT102C

LOFT (INEL)	L1-2	L1-3	L1-4
	L1-5	L2-2	I2-3
	L2-5	L3-1	L3-2
	L3-5	L3-6	L3-7
	L5-1	L6-1	L6-2
	L6-3	L6-5	L6-6-A
	L6-6-B	L6-7	L6-8-B1

(a) Proprietary Data: Available only to authorized users.

	L6-8-B2	L6-8-C1	L6-8-C2
	L6-8-C3	L6-8-D	L8-2
	L9-1	L9-3	L9-4
	LP-FW-1	LP-SB-1	LP-SB-2
LOFT (INEL)	Pump Characteristics		
LTSF (INEL)	LD01	LD03	LD04
	LD2A	LD35	LD4A
MARVIKEN (a)	3002	3006	3008
	3010	3011	3012
	3013	3014	3015
	3016	3017	3018
	3019	3020	3021
	3022	3023	3024
	3025	3026	3027
MOSS LANDING STEAM SEPARATION FACILITY (GE)	Pump Characteristics		
MULTI ROD BURST TEST (ORNL)	5B01	5B02	5B03
	5b04	5b05	5b06
	5b07	5b08	5b09
	5b10	5b12	5b13
	5b14	5b15	5b16
	5b17	5b18	5b19
	5b20	5b21	
NEPTUN (a)	5000	5001	5002
	5004	5005	5006
	5007	5008	5009
	5011	5012	
NRU	PTH 104 (a)	PTH 109 (a)	PTH 110 (a)
	MT-3.06		

(a) Proprietary Data: Available only to authorized users.

PBF (INEL)	PCM-1	PCM-2	PCM-2A
	PCM-3	PCM-4	PCM-5
	PCM-8	LLR-3	LLR-4
	LLR-4A	LLR-5	RIA1-1
	RIA1-2	RIA-ST-1	RIA-ST-2
	RIA-ST-3	RIA-ST-4	GC-2-1
	GC-2-2	GC-2-3	PR-01
	IE-1	IE-2	IE-3
	IE-5	IE-ST-1	IE-ST-2
	LOC-3	LOC-5A	LOC-5B
	LOC-5C	LOC-11C	LOC-11C
	TC-1A	TC-1B	TC-1C
PEACH BOTTOM (a)	TT01	TT02	TT03
ROSA III (a)	912		
SEMISCALE (INEL)	S-01-4A	S-01-6	
	S-03-D	S-03-5	
	S-04-5 (L&S)	S-04-6	
	S-06-1	S-06-2 (L&S)	
	S-06-3 (L&S)	S-06-4	
	S-06-5	S-06-6 (L&S)	
	S-07-1 (L&S)	S-07-4 (L&S)	
	S-07-6 (L&S)	S-07-10B	
	S-07-10D (L&S)		
	S-NC-1A	S-NC-1B	
	S-NC-2B	S-NC-3	
	S-NC-4B	S-NC-5	
	S-NC-6 (a)	S-NC-7C	
	S-NC-08	S-NC-8B	
	S-NC-09	S-NC-10	
	S-IB-01 (a)	S-IB-02	
	S-IB-03		
	S-SB2 (L&S)	S-SB4 (L&S)	
	S-SB4A (L&S)	S-SB-P1 (L&S)	
	S-SB-P2 (L&S)	S-SB-P3 (L&S)	
	S-SB-P4 (L&S)	S-SB-P7 (L&S)	

(a) Proprietary Data: Available only to authorized users.

	S-UT-1	S-UT-2
	S-UT-3-1	S-UT-3-2
	S-UT-4 (L&S)	S-UT-5 (L&S)
	S-UT-6 (L&S)	S-UT-7 (L&S)
	S-UT-8	
	S-SF-1	S-SF-2
	S-SF-3C	S-SF-4
	S-SF-5	
	S-SR-1	S-SR-2 (L&S)
	S-PL-1 (L&S)	S-PL-2 (L&S)
	S-PL-3 (L&S)	S-PL-4 (L&S)
	S-PL-7 (L&S)	S-SPL-01 (L&S)
	S-SPL-2 (L&S)	S-SPL-3 (L&S)
	S-SPL-4 (L&S)	S-SPL-7 (L&S)
	S1011	
SEMISCALE (INEL)	Pump Characteristics	
SEMISCALE (INEL)	Pump Characteristics Two-Phase Steady State	

SHBF (GE) (a)	1004	1006	1007
	1011	1012	1013
	1014	1018	1027
	1028	1030	1400
	1800	1901	2101
	2201	2202	2208
	2209	2307	2314
	2315	2319	2329
	2330	2331	2332
	2333	2334	2335
	2600	2901	3900
	3901	5101	6301
	7302	7307	
SSTF (GE) (a)	0016	0026	0034
	0048	0053	0055
	0056	0057	0059

(a) Proprietary Data: Available only to authorized users.

0062	0063	0064
0065	0067	0068
0075	0079	0080
0081	0085	0087
0088	0090	0111
0119	0204	0215
0220	0237	0239
0240	0241	0242
0243	0244	0245
0252	0256	0257
0262	0281	0282
0283	0286	0288
0289	0290	0291
0293	0298	0300
0301	0302	0311
0314	0316	0317
0318	0320	0324
0325	0329	0336
0337	0339	0340
0342	0343	0346
0347	0349	0351
0352	0360	0363
0373	0398	

THTF (ORNL)	100-105	151-158
	160-163	165-169
	171	3.02.10C
	3.02.10D	3.02.10E
	3.02.10F	3.02.10G
	3.02.10H	3.03.6AR (a)
	3.05.5B (a)	3.06.6B (a)
	3.07.9B	3.07.9C
	3.07.9D	3.07.9E (a)
	3.07.9F	3.07.9G
	3.07.9H	3.07.9I
	3.07.9N	3.07.9O
	3.07.9T	3.07.9U
	3.07.9V	3.07.9W
	3.07.9X	3.08.6C
	3.09.10O (a)	3.09.10P (a)
	3.09.10Q (a)	3.09.10R (a)

(a) Proprietary Data: Available only to authorized users.

	3.09.10S (a)	3.09.10T (a)	
	3.09.10U (a)	3.09.10V (a)	
	3.09.10W (a)	3.09.10X (a)	
TLTA-GE	4903	6004	6005
	6006	6007	6406 (a)
	6422	6423 (a)	6424 (a)
	6425 (a)	6426 (a)	6431 (a)
	6432 (a)	6441-6 (a)	
	6441-3 (a)	6441-7 (a)	
UNIVERSITY OF OTTAWA (Film Boiling-Heat Transfer data)	1504	1509	1510
	1511	1512	1513
	1514	1515	1516
WINFRITH VOID FRACTION DATA	Heat Transfer Data		

(a) Proprietary Data: Available only to authorized users.

APPENDIX B

DATA BANK ON-LINE DIAL-UP PROCEDURES

APPENDIX B

DATA BANK ON-LINE DIAL-UP PROCEDURES

INTERCOM HOURS OF OPERATION (MST OR MDST)

MONDAY	0800 TO 2400
TUESDAY THRU FRIDAY	0000 TO 2400
SATURDAY AND SUNDAY	0800 TO 1600

COMPUTER DIAL-UP NUMBERS

CYBER PHONE NUMBERS

S/N 201 (208) 526-1940
S/N 206 (208) 526-1920
WILL HANDLE 300 AND 1200 BAUD MODEMS

S/N 206 (208) 526-9917
WILL HANDLE 4800 BAUD MODEMS

DIAL-UP ON-LINE PROCEDURE

01) THE TELEPHONE MODEM SHOULD BE CONNECTED TO THE TERMINAL. THE BAUD RATE SHOULD BE SET ON THE TERMINAL, DEPENDING ON THE TYPE OF TERMINAL USED.

02) TURN ON POWER SWITCHES (TERMINAL AND MODEM). ALLOW A 10-20 SECOND WARMUP PERIOD.

03) DIAL THE DESIRED COMPUTER NUMBER (IN THE "VOICE" MODE). AFTER 1 OR 2 RINGS THERE SHOULD BE A HIGH FREQUENCY CONTACT TONE. SWITCH FROM "VOICE" TO "DATA" MODE.

IF, INSTEAD OF THE CONTACT TONE, THERE IS:

A. A BUSY SIGNAL, THE LINE IS IN USE. THE USER SHOULD SELECT ANOTHER NUMBER.

B. NO DIAL RESPONSE, THE PHONE CONNECTION WAS NOT COMPLETED AND THE USER SHOULD REDIAL

C. RINGING BUT WITH NO CONTACT TONE RESPONSE:

A) IT IS NOT SCHEDULED INTERCOM HOURS.

B) INTERCOM IS TEMPORARILY "DOWN".

C) THE COMPUTER BEING DIALED IS "DOWN". TRY THE OTHER COMPUTER.

04) AFTER COMMUNICATION HAS BEEN ESTABLISHED, PRESS THE RETURN KEY.(IT MAY BE NECESSARY TO PRESS THE KEY SEVERAL TIMES TO OBTAIN A RESPONSE). THE RESPONSE WILL BE:

```
INEL INTERCOM 5.1 L564
DATE  MM/DD/YY
TIME  HH:MM:SS

PLEASE LOGIN
```

APPENDIX C

LOGIN PARAMETERS FOR THE INEL COMPUTERS

APPENDIX C

LOGIN PARAMETERS FOR THE INEL COMPUTERS

EACH COMPUTER USER IS ISSUED APPROPRIATE RESPONSES FOR THE LOGIN PARAMETERS.

THE "LOGIN SEQUENCE", WHICH INCLUDES ACCOUNTING INFORMATION NEEDED FOR PROPER BILLING OF THE TERMINAL SESSION, MUST BE THE FIRST COMMAND ENTERED AFTER HARDWARE COMMUNICATION HAS BEEN ESTABLISHED. THE FOLLOWING IS A DESCRIPTION OF THAT SEQUENCE.

LOGIN,UID,TPW,C=XXXXXXXXX,SUP

WHERE: UID USER-ID, WHICH IS A UNIQUE 3-CHARACTER USER IDENTIFICATION CODE, (ALSO USED IN THE JOB STATEMENT FOR BATCH JOBS).

TPW TERMINAL PASSWORD, WHICH MUST CORRESPOND WITH THE USER-ID

C= CHARGE NUMBER TO WHICH THE TERMINAL SESSION WILL BE CHARGED.

SUP SUPRESS (OPTIONAL), WILL ELEMINATE THE INEL LOGIN BULLETINS NORMALLY DISPLAYED AT LOGIN.

NOTE: INCORRECT OR OUT OF SEQUENCE RESPONSES WILL CAUSE THE LOGIN TO ABORT. THREE SUCH ABORTS WILL RESULT IN A TERMINAL DISCONNECT.

APPENDIX D

COMMON OPTIONS AVAILABLE TO THE DATA BANK USER

APPENDIX D

COMMON OPTIONS AVAILABLE TO THE DATA BANK USER

Common options available to the Data Bank unlimited and limited users are outlined in Figures D-1 and D-2, respectively.

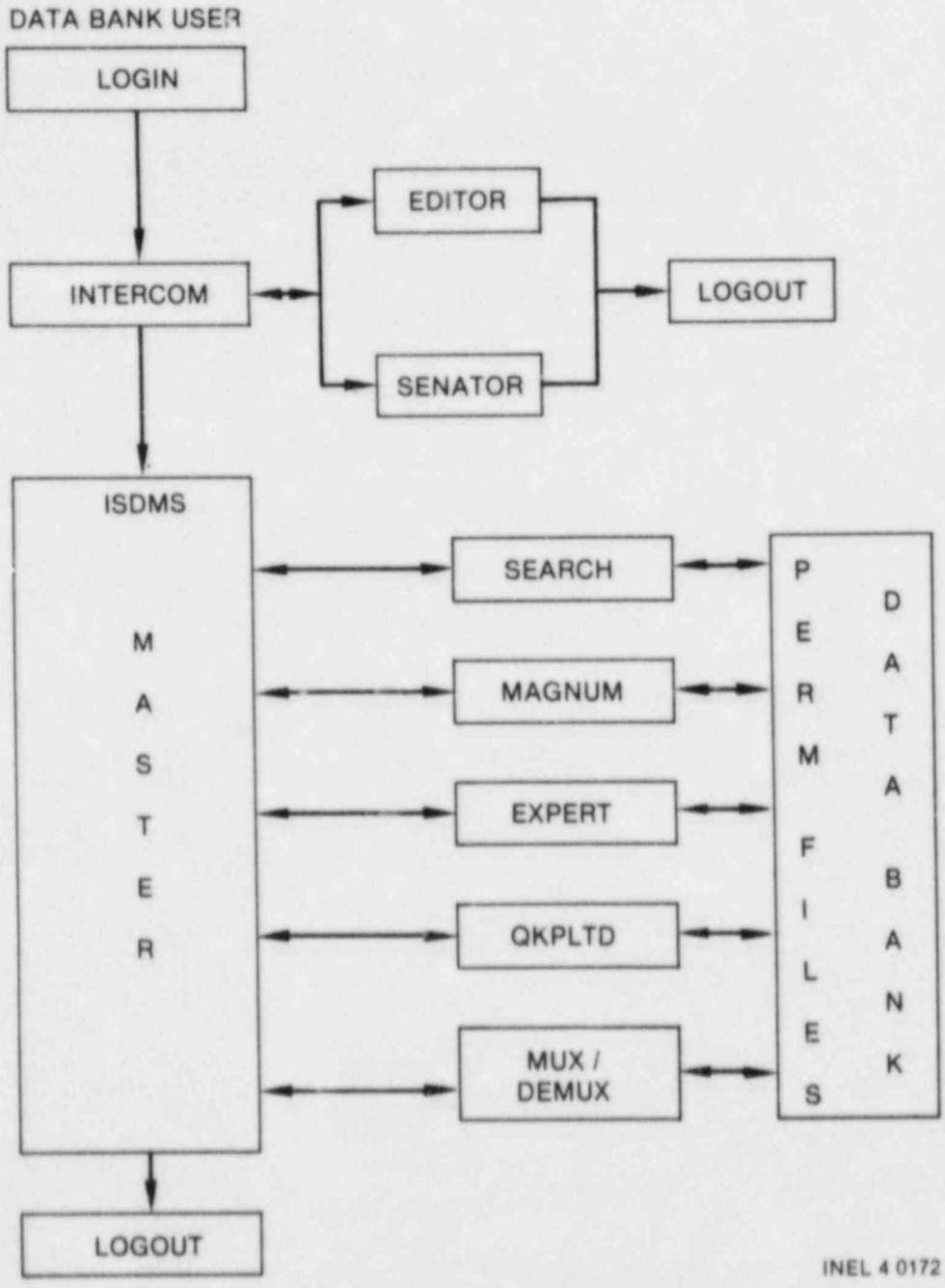

Figure D-1. Common options available to the Data Bank unlimited user.

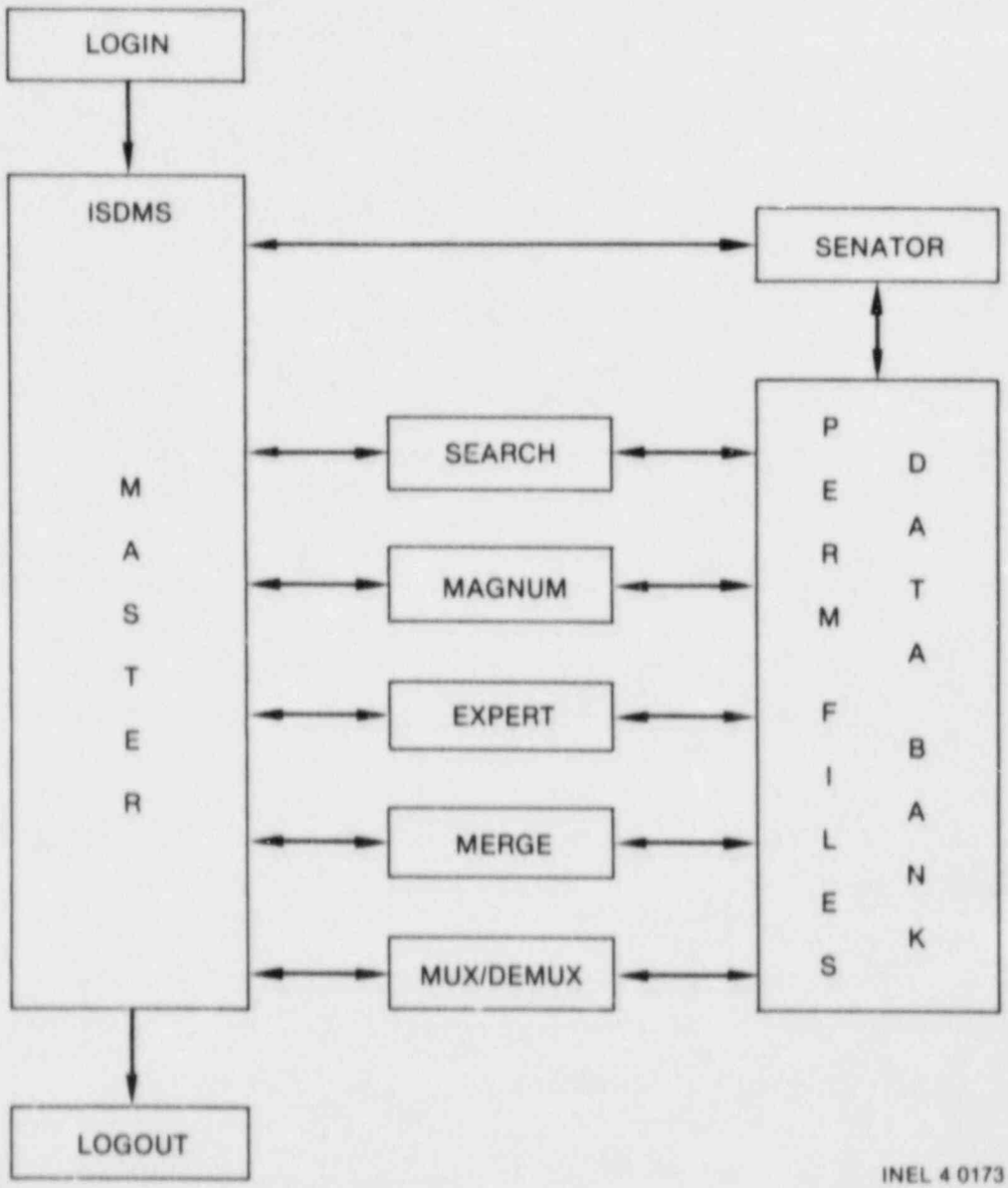

Figure D-2. Common options available to the Data Bank limited user.

APPENDIX E

TERMINAL SESSION TO LOCATE

TEST INFORMATION IN THE DATA BANK

APPENDIX E

TERMINAL SESSION TO LOCATE TEST INFORMATION IN THE DATA BANK

THE FOLLOWING INPUT COMMANDS (UNDERLINED) WILL LOCATE TEST DATA INFORMATION FOR GE/TLTA TEST 4903.

LOGIN SEQUENCE (APPENDIX B)

COMMAND-BEGIN MASTER (UNLIMITED USERS ONLY)

MASTER.1.4 (IDAHO NATIONAL ENGINEERING LABORATORY)
SCIENTIFIC DATA MANAGEMENT SYSTEM

TIME HH.MM.SS
DATE MM/DD/YY

GOOD MORNING UID

COMMAND . . SEARCH.OBSCOM

SEARCH.OBSCOM

SEARCH 1.3 (IDAHO NATIONAL ENGINEERING LABORATORY)

TIME HH.MM.SS
DATE MM/DD/YY

READY . . HELP OBSCOM

WELCOME TO THE NRC/DAE DATA BANK

MORE INFORMATION ABOUT USING THIS FILE, THE DATA BANK, AND ISDMS PROCESSORS MAY BE OBTAINED BY SELECTING "100".

THE DATA BANK CURRENTLY CONTAINS DATA FROM THE FOLLOWING TEST FACILITIES.

SELECTION	EXPEPIMENTAL TEST FACILITY
	GENERAL ELECTRIC
1	TLTA (SAN JOSE)
2	SHBF (SAN JOSE)
3	SSTF (LYNN MASS.)
4	FIST (SAN JOSE)

```
                IDAHO NATIONAL ENGINEERING LABORATORY
   10                LOFT
   11                LTSF
   12                PBF
   13                SEMISCALE
   14                FUEL BEHAVIOR DATA BASE

                WESTINGHOUSE
   20                FLECHT-SEASET (COSINE)
   21                FLECHT-SEASET (SKEWED)
   22                FLECHT-SEASET (161 ROD BUNDLE)
   23                FLECHT-SEASET (21 ROD BUNDLE)
   24                FLECHT-SEASET (163 ROD BUNDLE)
   25                FLECHT (STEAM SEPARATOR FACILITY)
   26                G-2 (CORE UNCOVERY)
   30             THTF (ORNL)
   35             2D/3D (JAPAN)
   40             PEACH BOTTOM (OPERATIONAL FACILITY)
   41             BROWNS FERRY (OPERATIONAL FACILITY)
   45             GOETA (SWEDEN)
   46             FEBA (GERMANY)
   47             ROSA-3 (JAPAN)
   48             NEPTUNE (SWITZERLAND)
   49             NRU (CANADA)
   50             HALDEN (NORWAY)
   55             KUOSHENG (FORMOSA)
   60             MARVIKEN (SWEDEN)
   70             HEAT TRANSFER DATA BASE
                     CONDIE TUBE DATA
                     UNIVERSITY OF OTTAWA
                     ARGONNE NATIONAL LABORATORY
                     ARORON (BERKLEY NUCLEAR LABORATORY)
                     JOWITT (WINFRITH, ENGLAND)
                     HEINEKIN
   80             PUMP CHARACTERISTICS DATA BASE
                     EPRI-B&W
                     EPRI-CE
                     GE-MOSS LANDING
                     WESTINGHOUSE CANADA LIMITED
                     LOFT-INEL
                     SEMISCALE-INEL
  100             INTRODUCTION TO DATA BANK AND ISDMS USAGE

*** ENTER SELECTION, 'BACK', OR 'END'  4
```

GE-TLTA TESTS CURRENTLY IN THE DATA BANK

	TEST			FILE NAME
1.	4903	RUN	16	GE4903&&
2.	6004	RUN	4	GE6004&&
	6005	RUN	6	GE6005&&
	6006	RUN	3	GE6006&&
	6007	RUN	6	GE6007&&
3.	6422	RUN	3	GE6422&&
4.	6431	RUN	1	GE6431&&
5	6432	RUN	1	GE6432&&
6.	6406	RUN	1	GE6406&&
	6423	RUN	?	GE6423&&
	6424			GE6424&&
	6425	RUN	2	GE6425&&
	6426	RUN	1	GE6426&&
7.	6441	RUN	6	GE6441&&6
		RUN	3	GE6441&&3
		RUN	7	GE644L&&7

30. MEASUREMENT PARAMETERS

*** ENTER SELECTION, 'BACK', OR 'END' . 1

TEST FACILITY

GE-TLTA

TEST IDENTIFICATION FILE NAME

TEST 4903 RUN 16 GE4903&&

REFERENCE: MURALIDHARAN, R. ET.AL.,

"BWR BLOWDOWN HEAT TRANSFER FINAL REPORT"

GEAP-21214, FEBRUARY 1976

*** ENTER 'BACK' OR C/E TO CONTINUE/END . . C

ABSTRACT

SYSTEM PERFORMANCE AND THERMAL RESPONSE CHARACTERISTICS OF BWR'S, DURING THE INITIAL BLOWDOWN PHASE UNDER LOSS-OF-COOLANT ACCIDENT (LOCA) CONDITIONS, WERE INVESTIGATED IN A SCALED TEST APPARATUS. A NUMBER OF INHERENT COOLING MECHANISMS WERE OBSERVED FOR WHICH NO CREDIT IS TAKEN IN THE CURRENT BWR LOCA EVALUATION METHOD. THE CURRENT METHOD, WHEN APPLIED TO THE TEST APPARATUS, SHOWS SUBSTANTIAL MARGIN IN THE PREDICTION OF PEAK CLADDING TEMPERATURE. SPECIFIC PHENOMENOLOGICAL MODEL IMPROVEMENTS ARE RECOMMENDED.

*** ENTER 'BACK' OR 'END' ... BACK

30 MEASUREMENT PARAMETERS

*** ENTER SELECTION, 'BACK', OR 'END' 30

TEST FACILITY

GE-TLTA

FILE IDENTIFIER	DESCRIPTION
&&&&&&CT	CURRENT
&&&&&&DD	DRAG DISK
&&&&&&DE	DENSITY
&&&&&&EN	ENERGY
&&&&&&ET	ENTHALPY
&&&&&&FM	MASS FLOW
&&&&&&FP	PUMP FLOW
&&&&&&FV	VOLUMETRIC FLOW
&&&&&&LE	LEVEL
&&&&&&ME	MOMENTUM FLUX
&&&&&&MS	MASS
&&&&&&MT	TURBINE METER
&&&&&&PC	PERCENT
&&&&&&PD	DIFFERENTIAL PRESSURE
&&&&&&PE	PRESSURE
&&&&&&PK	PEAK CLAD TEMPERATURE

```
&&&&&&PP                                POWER
&&&&&&QL                                QUALITY
&&&&&&RF                                RHOF
&&&&&&RG                                RHOG
&&&&&&RL                                RHOL
&&&&&&RP                                PUMP SPEED
&&&&&&TE                                TEMPERATURE
&&&&&&TM                                MAX TEMPERATURE
&&&&&&TS                                SATURATION TEMPERATURE
&&&&&&UF                                VOID FRACTION
&&&&&&UO                                VOLTAGE
&&&&&&VP                                VALVE POSITION

*** ENTER 'BACK' OR 'END' ...END

    READY ...RETURN

    COMMAND ...RETURN      (LIMITED USERS LOGGED OUT)
              RETURN

     ****************************************
     *** THANKS FOR USING  I  S  D  M  S  ***
     *** HAVE A NICE DAY ...                ***
     ****************************************

    COMMAND-LOGOUT
```

APPENDIX F

DATA BANK TEST SUMMARIES

APPENDIX F

DATA BANK TEST SUMMARIES

WELCOME TO THE NRC/DAE DATA BANK

MORE INFORMATION ABOUT USING THIS FILE, THE DATA BANK, AND ISDMS PROCESSORS MAY BE OBTAINED BY SELECTING "100".

THE DATA BANK CURRENTLY CONTAINS DATA FROM THE FOLLOWING TEST FACILITIES.

SELECTION	EXPERIMENTAL TEST FACILITY
	GENERAL ELECTRIC
1	TLTA (SAN JOSE)
2	SHBF (SAN JOSE)
3	SSTF (LYNN MASS.)
4	FIST (SAN JOSE)
	IDAHO NATIONAL ENGINEERING LABORATORY
10	LOFT
11	LTSF
12	PBF
13	SEMISCALE
14	FUEL BEHAVIOR DATA BASE
	WESTINGHOUSE
20	FLECHT-SEASET (COSINE)
21	FLECHT-SEASET (SKEWED)
22	FLECHT-SEASET (161 ROD BUNDLE)
23	FLECHT-SEASET (21 ROD BUNDLE)
24	FLECHT-SEASET (163 ROD BUNDLE)
25	FLECHT (STEAM SEPARATOR FACILITY)
26	G-2 (CORE UNCOVERY)
30	THTF (ORNL)
35	2D/3D (JAPAN)
40	PEACH BOTTOM (OPERATIONAL FACILITY)
41	BROWNS FERRY (OPERATIONAL FACILITY)
45	GOETA (SWEDEN)
46	FEBA (GERMANY)
47	ROSA-3 (JAPAN)
48	NEPTUNE (SWITZERLAND)
49	NRU (CANADA)
50	HALDEN (NORWAY)
55	KUOSHENG (FORMOSA)
60	MARVIKEN (SWEDEN)
70	HEAT TRANSFER DATA BASE
	CONDIE TUBE DATA
	UNIVERSITY OF OTTAWA
	ARGONNE NATIONAL LABORATORY
	ARDRON (BERKLEY NUCLEAR LABORATORY)
	JOWITT (WINFRITH, ENGLAND)
	HEINEKIN

APPENDIX G

CWAF DATA FILE DIRECTORY DESCRIPTION

APPENDIX G

CWAF DATA FILE DIRECTORY DESCRIPTION

SUMMARY

FL3550TE.....DBSCOM...

SEQ NO	IDENTIFIER	REC	E/U	POINTS	KEYWORDS
000001	TIME		077	000428	
000002	6J-1		034	000428	
000003	9G-1		034	000428	
000004	11E-1		034	000428	
000005	5H-2		034	000428	

FL3550TE	DATA FILE NAME
DBSCOM	USERID (UID) for all Data Bank data
SEQ NO	Sequential position of data channel on the data file.
IDENTIFIER	Channel name - assigned by the test facility
REC (optional)	Reflects record numbers identified by the test facility
E/U	Engineering unit code (see Appendix H for E/U code listings)
POINTS	Number of data samples per channel
KEYWORDS(optional)	Information pertaining to uncertainty etc. may be stored for each channel and is identified by keywords.

APPENDIX H

ENGINEERING UNIT CODES

APPENDIX H

ENGINEERING UNIT CODES

The following table lists the currently available Engineering Unit Codes with their respective labels and units sorted by label:

0077		
0264	ACCUMULATED CP SECONDS	
0265	ACCUMULATED I/O SECONDS	
0393	ALKALINITY	(mg/kg as CaCO3)
0321	AYA Liquid Velocity	(m/s)
0322	AYA Vapor Velocity	(m/s)
0218	BOILING NUMBER	
0389	CONCENTRATION	(mg/kg)
0390	CONCENTRATION	(ppm)
0391	CONDUCTIVITY	(mu-mho/cm)
0253	CP SECONDS ELEPHANT JOB CLASS	
0252	CP SECONDS LARGE JOB CLASS	
0251	CP SECONDS MEDIUM JOB CLASS	
0250	CP SECONDS SMALL JOB CLASS	
0223	ECKERT NUMBER	
0367	EDQ	
0224	EULER NUMBER	
0212	FROUDE NUMBER	
0220	GRASHOF NUMBER	
0257	I/O SECONDS ELEPHANT JOB CLASS	
0256	I/O SECONDS LARGE JOB CLASS	
0255	I/O SECONDS MEDIUM JOB CLASS	
0254	I/O SECONDS SMALL JOB CLASS	
0261	INTERCOM CP TIME	(sec)
0262	INTERCOM I/O TIME	(sec)
0368	IQF	
0260	JULIAN DAY	
0213	KNUDSEN NUMBER	
0186	LEIDENFROST Temperature	(F)
0187	LEIDENFROST Temperature	(K)
0211	LEWIS NUMBER	
0219	MACH NUMBER	
0217	MARTINELLI NUMBER	
0215	NUSSELT NUMBER	
0392	OXIDATION-REDUCTION-POTENTIAL	(mv)
0216	PRANDTL NUMBER	
0221	RALEIGH NUMBER	
0209	REYNOLDS NUMBER	
0269	RHOF	(lbm/ft3)
0270	RHOG	(lbm/ft3)
0271	RHOL	(lbm/ft3)
0319	ROUHANI Liquid Velocity	(m/s)

0320	ROUHANI Vapor Velocity	(m/s)
0214	STABILITY NUMBER	
0222	STANTON NUMBER	
0225	STROUHAL NUMBER	
0263	SYSTEM SECONDS	(SS)
0189	T[wall] - T[sat]	(K)
0188	T[wall] - T[sat]	(F)
0258	TOTAL CP TIME	(sec)
0259	TOTAL I/O TIME	(sec)
0210	WEBER NUMBER	
0358	Absolute Pressure	(kg/m-s2)
0059	Acceleration	(ft/sec2)
0089	Angular Velocity	(rad/s)
0195	Area	(cm2)
0192	Area	(ft2)
0194	Area	(in2)
0193	Area	(m2)
0294	Ave Momentum Flux	(Mg/m-s2)
0289	Average Density	(Mg/m3)
0341	Average Density	(Mg/m3)
0290	Average Pressure	(MPa)
0291	Average Pressure	(kPa)
0292	Average Temperature	(K)
0098	Average Velocity	(ft/sec)
0293	Average Velocity	(m/s)
0350	Boron Concentration	(ppm)
0394	Calculated Dif Pressure	(in H2O)
0050	Choking Index	
0377	Cladding Axial Strain	(Percent)
0380	Cladding Circ Strain	(Percent)
0122	Cladding Elongation	(Percent)
0121	Cladding Elongation	(mm)
0382	Cladding Surface Temperature	(C)
0125	Cladding Surface Temperature	(K)
0330	Cladding Temperature	(F)
0274	Cladding Temperature	(K)
0329	Coolant Temperature	(F)
0278	Coolant Temperature	(K)
0001	Core Heater Temperature	(F)
0060	Core Heater Temperature	(K)
0231	Counts	(Log[C/S])
0179	Crit. Heat Flux	(Btu/hr-ft2)
0180	Crit. Heat Flux	(kw/m2)
0154	Critical Heat Flux	(W/m2)
0299	Current	(MA)
0011	Current	(A)
0230	Current	(Amperes RMS)
0312	Current	(Log[A])
0272	Current	(kA)
0013	Decibels	(db)

0238	Delta-Theta	(Radians)
0232	Density	(Mg/m3)
0071	Density	(Kg/m3)
0017	Density	(lbm/ft3)
0247	Depressurization Rate	(kPa/s)
0199	Diameter	(cm)
0196	Diameter	(ft)
0198	Diameter	(in)
0197	Diameter	(m)
0273	Differential Pressure	(MPa)
0284	Differential Pressure	(Pa)
0363	Differential Pressure	(bar)
0366	Differential Pressure	(mb)
0332	Differential Pressure	(inches)
0070	Differential Pressure	(kPa)
0016	Differential Pressure	(psid)
0348	Differential Pressure	(mmWg)
0359	Differential Pressure	(kg/m-s2)
0385	Differential Pressure	(m-H2O)
0206	Discharge Coefficient	
0316	Displacement	(cm)
0318	Displacement	(in)
0311	Displacement	(inches)
0314	Displacement	(m)
0280	Displacement	(mm)
0190	Distance	(ft)
0191	Distance	(m)
0307	Distance	(mils)
0302	Distance	(mm)
0266	Drag Disc	(mv)
0030	Elevation	(ft)
0083	Elevation	(m)
0335	Energy	(MW-h)
0040	Energy	(Btu)
0305	Energy	(J/Kg)
0243	Enthalpy	(GJ)
0023	Enthalpy	(Btu/lbm)
0076	Enthalpy	(KJ/kg)
0244	Enthalpy Flow	(MW)
0361	Event	
0337	Fission Product Detectors	(Counts)
0184	Flooding Rate	(ft/sec)
0185	Flooding Rate	(m/s)
0104	Flow Quality	
0387	Flow Rate	(kg/hr)
0207	Flow Regime	
0277	Fluid Density	(Mg/m3)
0342	Fluid Density	(Mg/m3)
0331	Fluid Subcooling	(F)
0283	Fluid Subcooling	(K)

ENGINEERING UNIT CODES

05/27/83

0002	Fluid Temperature	(F)
0061	Fluid Temperature	(K)
0082	Fluid Velocity	(cm/s)
0006	Fluid Velocity	(ft/sec)
0028	Fluid Velocity	(in/sec)
0065	Fluid Velocity	(m/s)
0066	Force	(N)
0007	Force	(lb)
0057	Frequency	(Hz)
0208	Friction Factor	
0376	Fuel Axial Strain	(Percent)
0379	Fuel Centerline Temperature	(C)
0118	Fuel Centerline Temperature	(K)
0117	Fuel Off-Center Temperature	(K)
0369	Fuel Plenum Temperature	(K)
0301	Fuel Rod Ave Power	(KW/ft)
0114	Fuel Rod Ave Power	(KW/M)
0113	Fuel Rod Peak Power	(KW/m)
0111	Fuel Rod Temperature	(F)
0370	Fuel Temperature	(K)
0381	Gap Conductance	(Btu/hr-ft2-F)
0308	Gas Flow Rate	(gm-moles/sec)
0279	Guide Tube Temperature	(K)
0110	Guide Tube Temperature	(F)
0355	G's	
0353	G's/Radian	
0020	H. T. Coeff.	(Btu/hr-ft2-F)
0339	H. T. Coeff.	(Btu/sec-ft2-F)
0073	H. T. Coeff.	(KW/m2-K)
0019	Heat Flux	(Btu/hr-ft2)
0338	Heat Flux	(Btu/sec-ft2)
0072	Heat Flux	(KW/m2)
0388	Heat Flux	(W/m2)
0155	Heat Transfer Coeff	(W/m2-K)
0051	Heat Transfer Mode	
0045	Heat Transfer Rate	(Btu/hr)
0153	Heat Transfer Rate	(W)
0172	Heat of Vaporization	(Btu/lbm)
0173	Heat of Vaporization	(KJ/Kg)
0101	Horsepower	(KW)
0344	Inlet Subcooling	(Btu/lbm)
0120	Inlet Temperature	(K)
0080	Integrated Mass Flow	(Kg)
0026	Integrated Mass Flow	(lbm)
0147	Interface Velocity	(m/s)
0054	Internal Rod Temperature	(F)
0093	Internal Rod Temperature	(K)
0150	Junction L/I Energy	(J/Kg)
0148	Junction Liq Density	(Kg/m3)
0145	Junction Liq Velocity	(m/s)

0151	Junction V/I Energy	(J/kg)
0149	Junction Vap Density	(kg/m3)
0146	Junction Vap Velocity	(m/s)
0067	Length	(cm)
0345	Length	(ft)
0008	Length	(in)
0268	Level	(mv)
0128	Liquid Density	(kg/m3)
0226	Liquid Density	(lbm/ft3)
0091	Liquid Level	(cm)
0055	Liquid Level	(in)
0249	Liquid Level	(m)
0099	Liquid Phase Velocity	(ft/sec)
0168	Liquid Specific Heat	(Btu/lbm-F)
0169	Liquid Specific Heat	(J/kg-K)
0161	Liquid Viscosity	(cp)
0160	Liquid Viscosity	(lbm/ft-hr)
0133	Liquid Void Fraction	
0325	Local Heat Generation	(kW/ft)
0276	Local Heat Generation	(kW/m)
0245	Mass	(Mg)
0229	Mass	(kg)
0246	Mass	(kg)
0046	Mass	(lbm)
0041	Mass Balance	(lbm)
0365	Mass Flow	(Mlb/hr)
0079	Mass Flow	(kg/s)
0298	Mass Flow	(lbm/hr)
0025	Mass Flow	(lbm/sec)
0157	Mass Flow Rate	(kg/s)
0328	Mass Flow Rate	(lbm/sec)
0383	Mass Flow Rate	(mlbm/hr)
0102	Mass Flow/Vol	(lbm/ft3-sec)
0033	Mass Flux	(10x6 lbm/hr-ft2)
0078	Mass Flux	(kg/s-m2)
0306	Mass Flux	(lb/hr-ft2)
0024	Mass Flux	(lbm/sec-ft2)
0343	Mass Velocity	(lbm/hr-ft2)
0010	Material Temperature	(F)
0068	Material Temperature	(K)
0156	Mesh Point Temperature	(K)
0340	Metal Temperature	(F)
0275	Metal Temperature	(K)
0357	Moments	(N-m)
0356	Moments	(lbf-in)
0233	Momentum Flux	(Mg/m-s2)
0126	Momentum Flux	(10x3 lbm/ft-sec2)
0081	Momentum Flux	(kg/m-s2)
0027	Momentum Flux	(lbm/ft-sec2)
0375	Neutron Detector	(W/cm)

0336	Neutron Detectors	(Nano Amps)
0107	Neutron Detectors	(Percent PWR)
0116	Neutron Flux	(n/cm2-s)
0372	Neutron Flux	(10x13 n/cm2-s)
0032	Normalized Power	
0048	Normalized Pump Torque	
0119	Outlet Temperature	(K)
0124	Peak Flux	(n/cm2-s)
0056	Percent	
0044	Period	(sec)
0097	Photo Tube Temperature	(F)
0313	Potential	(V)
0181	Power	(Btu/hr)
0042	Power	(MW)
0282	Power	(Pct Pwr)
0295	Power	(np)
0018	Power	(kW)
0334	Power	(kW/m)
0228	Power	(kw/m)
0371	Power	(GW)
0373	Power	(kW/ft)
0152	Power Input	(W)
0087	Pressure	(MPa)
0347	Pressure	(Pa)
0362	Pressure	(bar)
0062	Pressure	(kPa)
0014	Pressure	(psi)
0015	Pressure	(psia)
0003	Pressure	(psig)
0386	Pressure	(kg/cm2)
0239	Pump Head	(m2/s2)
0240	Pump Momentum Source	(m/s2)
0281	Pump Power	(kW)
0029	Pump Speed	(rpm)
0090	Pump Torque	(N-m)
0297	Pump Torque	(Percent)
0296	Pump Torque	(lbf-ft)
0031	Quality	
0354	Radians	
0203	Radius	(cm)
0200	Radius	(ft)
0202	Radius	(in)
0201	Radius	(m)
0038	Reactivity	($)
0315	Reactor Power	(GW)
0112	Reactor Power	(Mw)
0351	Reactor Power	(W)
0378	Rod Internal Pressure	(psia)
0123	Rod Internal Pressure	(MPa)
0285	Rod Position	(m)

0360	Rotational Speed	(m/s)
0352	Rotations	(Radians)
0115	S-P Neutron Detector Curr	(nA)
0288	Saturation Pressure	(MPa)
0286	Saturation Pressure	(Pa)
0287	Saturation Pressure	(kPa)
0047	Saturation Pressure	(psia)
0248	Saturation Temperature	(C)
0022	Saturation Temperature	(F)
0075	Saturation Temperature	(K)
0103	Slip Ratio	
0236	Specific Entropy	(Btu/lbm-R)
0237	Specific Entropy	(kJ/kg-K)
0166	Specific Heat	(Btu/lbm-F)
0167	Specific Heat	(J/kg-K)
0130	Specific Int Energy	(J/kg)
0131	Specific Liq Int Energy	(J/kg)
0132	Specific Vap Int Energy	(J/kg)
0012	Specific Volume	(ft3/lbm)
0069	Specific Volume	(m3/kg)
0106	Steam Quality	
0039	Stored Energy	(Btu)
0310	Strain	(Micro m/m)
0004	Strain	(Micro in/in)
0063	Strain	(mm/m)
0021	Surface Temperature	(F)
0074	Surface Temperature	(K)
0165	Surface Tension	(N/m)
0164	Surface Tension	(lbf/ft)
0374	Tank Level	(L)
0242	Temperature	(C)
0034	Temperature	(F)
0084	Temperature	(K)
0327	Temperature Difference	(C)
0326	Temperature Difference	(K)
0096	Temperature Difference	(F)
0053	Thermal Conductivity	(Btu/hr-ft-F)
0092	Thermal Conductivity	(kW/m-K)
0174	Thermal Diffusivity	(ft2/sec)
0175	Thermal Diffusivity	(m2/s)
0105	Thermodynamic Quality	
0317	Time	(S from year 1900)
0176	Time	(hr)
0364	Time	(min)
0086	Time	(s)
0036	Time	(sec)
0088	Time After Reflood	(s)
0052	Time After Reflood	(sec)
0177	Time After Rupture	(hr)
0085	Time After Rupture	(s)

0035	Time After Rupture	(sec)
0178	Time To CHF	(s)
0127	Total Density	(kg/m3)
0309	Total Energy	(J)
0037	Total Energy	(Btu)
0043	Total Heat Removed	(Btu/hr)
0058	Total Volume	(ft3)
0109	Valve Position	(Percent Closed)
0108	Valve Position	(Percent Open)
0346	Valve Position	(V)
0267	Valve Position	(mv)
0129	Vapor Density	(kg/m3)
0227	Vapor Density	(lbm/ft3)
0100	Vapor Phase Velocity	(ft/sec)
0170	Vapor Specific Heat	(Btu/lbm-F)
0171	Vapor Specific Heat	(J/kg-K)
0182	Vapor Velocity	(ft/sec)
0183	Vapor Velocity	(m/s)
0163	Vapor Viscosity	(cp)
0162	Vapor Viscosity	(lbm/ft-hr)
0134	Vapor Void Fraction	
0235	Velocity	(m/s)
0159	Viscosity	(cp)
0158	Viscosity	(lbm/ft-hr)
0095	Void Fraction	
0384	Vol Nuc Heat Power	(W/m3)
0300	Voltage	(MV)
0009	Voltage	(V)
0234	Voltage	(Volts RMS)
0204	Volume	(ft3)
0304	Volume	(in3)
0205	Volume	(m3)
0303	Volume	(mm3)
0143	Volume Equil Temperature	(K)
0139	Volume Equilibrium Quality	
0140	Volume Heat Source	(W)
0141	Volume Liquid Temperature	(K)
0135	Volume Liquid Velocity	(m/s)
0137	Volume Pressure	(Pa)
0144	Volume Sonic Velocity	(m/s)
0138	Volume Static Quality	
0142	Volume Vapor Temperature	(K)
0136	Volume Vapor Velocity	(m/s)
0049	Volumetric Flow	(ft3/sec)
0005	Volumetric Flow	(gpm)
0064	Volumetric Flow	(L/s)
0094	Volumetric Flow	(mL/s)
0349	Volumetric Flow	(m3/hr)
0333	Volumetric Flow Rate	(L/s)
0241	Volumetric Flow Rate	(m3/s)

0395	Volumetric Flow Rate	(gpm)
0323	Volumetric Liquid Velocity	(m/s)
0324	Volumetric Vapor Velocity	(m/s)

APPENDIX I

SAMPLE MACRO PROGRAM TO PRODUCE MAGNUM PLOTS

APPENDIX I

SAMPLE MACRO PROGRAM TO PRODUCE MAGNUM PLOTS

```
*STATZ
MAGNUM
ATTACH,CWAF,STATZDATA,UID
FINDC,1,1,2,3
VBAR,1,2
BARS,1,2
NOID
HCOPY
XMIN,39.
XMAX,55.
YTICS,5
XTICS,5
XMAFRM,2
YMAFRM,2
NOGRIDS
BLABEL1,"TOTAL YTD=902,055      NUMBER OF WEEKS=15"
BLABEL2,"WEEKLY AVERAGES=50,137"
XLABEL,"WEEKS FROM JANURARY 1,1980"
YLABEL,"CCU"
TLABEL1,"CYBER 176 CCU"
YMIN,20000
YMAX,120000.
PLOT,1
BLABEL1,"TOTAL YTD=66,440,314 NUMBER OF WEEKS=15"
BLABEL2,"WEEKLY AVERAGE=4,429,394.27"
YLABEL,"SSYS"
TLABEL1,"CYBER 176 SSYS"
YMIN,1.0E+06
YMAX,1.0E+07
PLOT,2
BLABEL1,"TOTAL YTD=1,881    NUMBER OF WEEKS=15"
BLABEL2,"WEEKLY AVERAGE=125.4"
XLABEL,"CPU HRS"
TLABEL1,"CYBER 176 CPU HRS"
YMIN,50.
YMAX,250.
PLOT,3
RETURN
RETURN
```

APPENDIX J

SAMPLE MERGE PROGRAM USED TO EITHER COMBINE MULTIPLE CWAF FILES INTO ONE, OR TO EXTRACT SELECTED INFORMATION FROM LARGE FILES

APPENDIX J

SAMPLE MERGE PROGRAM USED TO EITHER COMBINE MULTIPLE CWAE FILES INTO ONE, OR TO EXTRACT SELECTED INFORMATION FROM LARGE FILES

Some instances occur when a user does not need all of the information stored in a Data Bank file. The MERGE processor can be used to extract only the data channels needed. The user can then catalog those channels under his/her USERID creating a working file.

There are many advantages to creating a working file, namely, cost savings, the availability of the file without the automatic purge, the capability of backing up files to tape for future use, and the capability of combining multiple parameter types into one file.

To extract channels using MERGE, the original Data Bank file must be restored from tape to disk. The commands to restore Data Bank files are as follows.

```
LOGIN,UID,PW,CHARGE
BEGIN,MASTER              (unlimited user only)
SEARCH
FIND,PFN                  - (PFN = Permanent File Name where
                            data are stored)
GET,ALL
RETURN
```

NOTE: If files are on tape and not on disk, it can take up to 24 hours to restore Data Bank files.

The commands to create a working file are as follows.

```
BEGIN,MASTER              - (Loads executive routines.  Not
(unlimited user only)       required for limited users.)
MERGE                     - Loads the MERGE processor.
AUTO,ON                   - Automatically returns local file
                            CWAF after cataloging.
A,1,PFN,DBSCOM            - Attaches a Data Bank permanent file.
                            Up to 9 files can be attached at the
                            same time.  This command is used
                            when combining multiple parameter
                            types: A,2,PFN,DBSCOM etc.
CHAN,1,3,7,-4,-20         - Requesting channels 3,7 and 4
                            through 20 from PFN, to be written
                            to local file CWAF.  If more than
                            one file is attached, to extract
                            channels from each of those files
                            the entry would be CHAN,2,-4,-20
                            etc.
SU,CWAF                   - Listing of the channels in the new
```

file CWAF.

C,CWAF,PFN,UIDCOM - Catalog s the new file. The COM must be added if the file is to be added to the users directory.

After the file has been cataloged, a user may then create a directory in SEARCH, for easy maintenance of files, such as tape backup. The command sequence to create a user directory is as follows.

BEGIN,MASTER	(unlimited user only)
SEARCH,UIDCOM	- The user will enter his/her USERID, used when cataloging the files. The users directory password will then be prompted on the screen, the user must write this down as this will be the only time it appears.
FIND,ALL	- Finds all files cataloged under USERID entered.
RETURN COMMAND...	- Returned to MASTER.

The command sequence to backup files to tape is as follows.

BEGIN,MASTER	(unlimited user only)
SEARCH,UIDCOM	
FIND,PFN	- Find data permanent files wanted to backup.
PW=XXX	- Enter users directory password given when directory was created.
BACKUP,ALL	- Backup to tape all data permanent files requested. The job is automatically batched when a RETURN is entered.
RETURN COMMAND...	- Returned to MASTER.

After the files have been backed up on tape, a user will follow the same set of commands to restore the files to disk as were discussed earlier in this appendix. With the exception of entering into the SEARCH processor. The user will enter SEARCH and the USERID under which the directory was created. SEARCH,UIDCOM.

APPENDIX K

ESTABLISHMENT OF OFF-SITE USAGE OF THE NRC/DAE DATA BANK

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In order to be an authorized off-site user of the NRC/DAE Data Bank located at EG&G Idaho, the following procedure will be followed:

1. The potential new user should write a letter to the NRC expressing interest in using the Data Bank. It should be addressed to:

   C. R. Troutman
   USNRC
   Division of Reactor Safety Research
   Silver Springs
   Washington, D. C. 20555

   A copy should be sent to the Data Bank Administrator (DBA)

   E. T. Laats
   EG&G Idaho
   P. O. Box 1625
   Idaho Falls, ID 83415

   and to:

   P. E. Litteneker
   Idaho Operations Office - DOE
   550 2nd Street
   Idaho Falls, ID 83401

2. The Data Bank administration will:

   a. Submit a computer users request to the Computer Users Service at EG&G. To obtain Users Identification Code and LOGIN password.

   b. Coordinate with the user and the NRC, a billing method for computer charges.

   c. Send documentation which will include Cyber Computer Users Guide, Data Base (ISDMS) usage and Data Bank information.

3. The DBA will arrange for new User orientation either at EG&G or at the users location.

4. The user will receive any updates

to the Data Bank Contents and information
on related computer or data base changes.

EG&G Idaho, Inc.
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Idaho Falls, Idaho 83415