Title
DOE/RECON USER'S MANUAL. PARTS I AND II

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Publication Date
1981-05-01

LBL-12744
For publication as DOE/TIC-4586/R1

Lawrence Berkeley Laboratory
UNIVERSITY OF CALIFORNIA

Engineering & Technical Services Division

DOE/RECON USER'S MANUAL
Parts I and II

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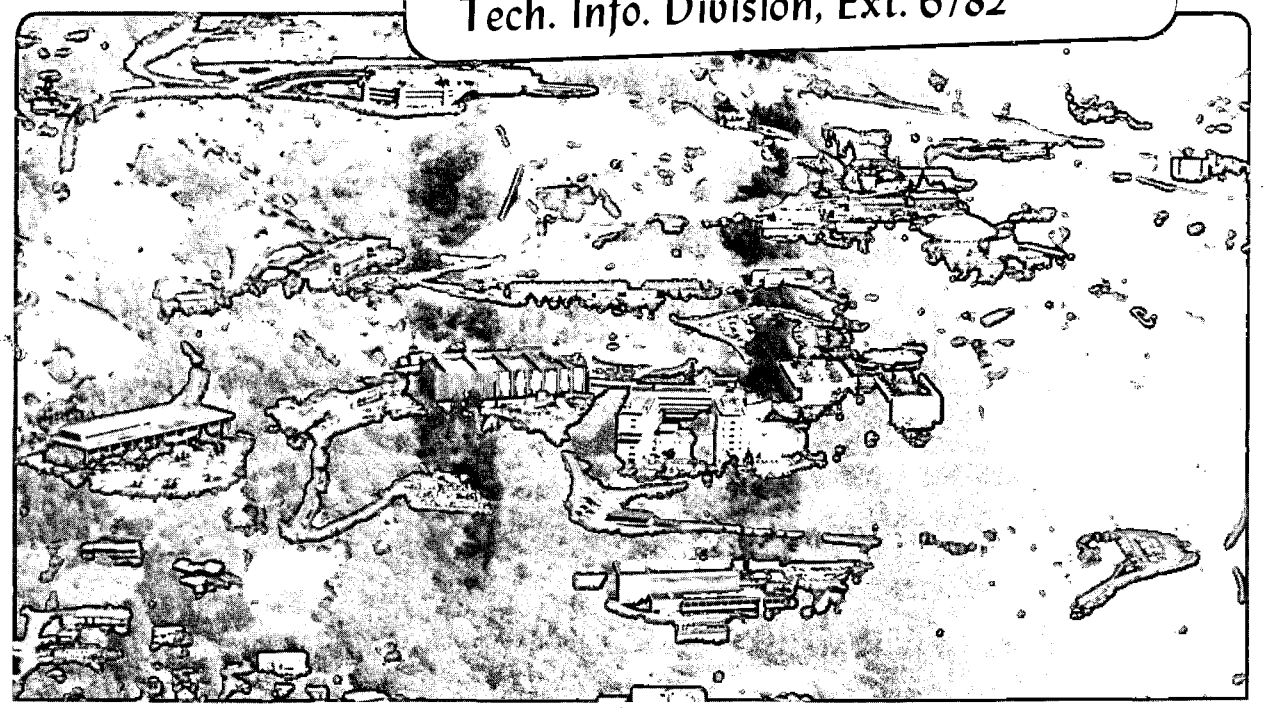
May 1981



Prepared for the U.S. Department of Energy under Contract W-7405-ENG-48

DISCLAIMER

LBL-12744

DOE/RECON USER'S MANUAL

PART 1: THE SYSTEM

PART 2: THE COMMANDS

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May 1, 1981

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This work was supported by the Assistant Secretary for Management and Administration, Technical Information Center of the U.S. Department of Energy under Contract W-7405-ENG-48.

DOE/RECON USER'S MANUAL

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1.1 DESCRIPTION OF THE DOE/RECON SYSTEM

1.1.1 Background

DOE/RECON is a computerized information retrieval system designed to provide users with remote terminal access to bibliographic and other data bases. The system permits users to carry on a dialogue with the computer. This dialogue can allow one to browse through large data bases and can result in retrieval of citations which answer specific needs. Desired information can be selectively retrieved via simple, yet powerful commands sent to the computer from the terminal keyboard.

Search logic may be formulated by the use of indexed terms, such as keywords, authors, categories, or corporate authors. As the search session progresses, AND, OR and NOT Boolean logic may be used to improve precision, i.e., the specificity of the retrieved set. For most data bases, the user may limit the scope of the search to particular years or volumes of data. Upon completion of a search, the user may choose to have the results displayed or printed at his/her terminal or to have the results printed at ORNL and mailed the following day. In most cases, the user will display a few document descriptions at the terminal to determine the success of the search. If the results are appropriate, they then may be routed to the high-speed printer for printing and mailing.

There are two other modes by which DOE/RECON offline prints may be received. Those users who are geographically located near a Secure Automatic Communications Network (SACNET) station may choose to receive their prints via this DOE-wide telecommunications network. Others who have a minicomputer that can be used as a remote job entry station (RJE) to an IBM computer system may request permission from the DOE Technical Information Center to dial into the ORNL computer and obtain, in this way, the results of DOE/RECON searches.

The DOE/RECON system was initially developed by Lockheed Corporation for the National Aeronautics and Space Administration. It was purchased by the U.S. Atomic Energy Commission primarily to support the Nuclear Science Abstracts data base which was to be used by a small number of remote terminals. The system was installed at Oak Ridge National Laboratory (ORNL) in 1970-71 and operated experimentally for three or four years. Since that time, the online retrieval portion has been rewritten to provide easier maintenance, greater flexibility, and improved performance. The current version supports over 25 data bases with more than 600 dialup users.

The DOE/RECON system is supported on an IBM 370/3033 computer at ORNL by the Computer Sciences Division of Union Carbide Corporation, Nuclear Division. DOE/RECON shares the computer resources with other online systems and some background batch programs in a multiprogramming environment. Two IBM 3705 front-end communications computers are used to perform the message switching. These machines relieve the host computer of busy work, thereby permitting it to devote more time to information retrieval and other activities.

At first all users accessed the system via dedicated multi-drop leased-line terminals. These CC-30 and CC-40 CRT terminals were manufactured by Computer Communications, Inc. In 1975 support was provided for interactive dialup terminals and in 1979 Telenet linkup was added. The steady growth of the number of dialup users, the decline in the use of the CC-30 and CC-40 terminals, and the comparative economics of the two resulted in the decision to phase out all dedicated terminals at the end of 1980. Dialup terminals must be Teletype-compatible with transmission rates of 10, 30, or 120 CPS. However, the lowest rate is not recommended for information retrieval work.

DOE/RECON is used primarily by technical librarians, technical information centers, and scientists and engineers for performing literature searches. Although most data bases are bibliographic in content, DOE/RECON is not limited to this type: the Research in Progress (RIP) data base is one that is non-bibliographic.

The contents of the data bases are the responsibility of the data base suppliers (source). Some data bases originate at DOE Technical Information Center, some at ORNL, and some from other sources. A few of the data bases from other sources are proprietary and are acquired on a contractual basis. As such, there are restrictions which necessitate that they not be available to all users. When a restricted user issues a BEGIN command, he/she will obtain a numbered list of the total data bases minus those not available.

Users desiring access to a restricted data base should contact D.E. Bost of the DOE Technical Information Center in Oak Ridge. Arrangements can be made for a user to pay the supplier in order to gain access to that particular data base.

1.1.2 Service schedule

DOE/RECON is available from 9 a.m. to 8 p.m. EST, Monday through Friday, except for holidays. Scheduled holidays are announced in the DOE/RECON Newsletter.

1.1.3 Access

Access to DOE/RECON is granted to DOE offices, to institutions holding DOE contracts, to other federal agencies with energy related or energy intensive missions, and to state agencies with state-wide responsibilities for energy programs or information.

Unless special arrangements are made with the DOE Technical Information Center in Oak Ridge, DOE/RECON is to be used only for persons employed in the specific organizational entity to which the password is granted.

1.1.4 Cost

The following cost elements are built into the DOE/RECON charges: connect time, Telenet charges, offline prints, and overhead. Costs are given in Appendix A. Connect time is computed from the first BEGIN (B) command through the ENDSTOP (=STOP) command.

1.2. COMMUNICATING WITH DOE/RECON

1.2.1 Direct-dial procedures

Throughout this manual, user actions are shown in lower case (except when capital letters are required). System messages are in uppercase.

DOE/RECON may be used by direct dialing to the 3033 computer in Oak Ridge via commercial telephone lines or via the Federal Telecommunications System (FTS). The telephone numbers are given in Section 1.2.2. The procedure is as follows:

SYSTEM MESSAGE	USER ACTION	EXPLANATION
	Set switches: Even parity Half duplex 300 BAUD or 1200 BAUD	
	Dial Oak Ridge computer	Dial appropriate phone number for 300 BAUD, or 1200 BAUD-Bell 212A modem.
High-pitched tone	Establish connection	Place receiver in acoustic coupler or Press "DATA" button on modem
No message	Arecon (CR)	Type Arecon (CR), i.e., capital A followed by recon in capital or small letters followed by carriage return. All DOE/RECON commands must be sent to the computer by a carriage return (CR); on some terminals, this key is labeled RETURN.
ENTER ID:	xxx (CR)	When DOE/RECON prompts for a user ID, enter your three-character user ID. After asking for a password the system will send a 21-line welcome message.
	or	
	xxxno (CR)	To receive a brief welcome message, enter your ID followed by "no" or "NO."

ENTER PASSWORD	yyyyy (CR)	When DOE/RECON prompts for a password, enter your password (up to 8 alpha-numeric characters; not the 6-digit numeric Telenet password).
WELCOME MESSAGE		DOE/RECON will give a long or short welcome message, depending on whether the ID was entered alone or with "no."

An example of direct-dial logon with a full message in response is shown below. Note the ID/number given in this message: LBL/523 STARTED AT 15:02:30 ON 02-02-81. This ID/number combination may be used to reconnect to this session in case of accidental disconnect (see Warm Start, Section 1.2.10).

```
Arecon
ENTER ID
lbl
ENTER PASSWORD
xxxxxxxx
LBL/523 STARTED AT 15:02:30 ON 02-02-81

  DOE/RECON INFORMATION RETRIEVAL SYSTEM
  ========= =========== ========= ======

This system was developed to provide
rapid and easy access to energy-related
data bases produced or obtained by the
U. S. Department of Energy's (DOE)
Technical Information Center.  DOE/RECON
is operated for the Technical
Information Center at Oak Ridge
National Laboratory.
=======================================
For basic tutorial help, type ? and
press the -return- key.
To access the online user's manual
type ?index.
***************************************
To find the latest change to the Help
File type ?NEWS.

HELP FILE LAST UPDATED
AT 10.29.07 ON 11/26/80
```

A direct logon with brief welcome message follows.

```
 Arecon
ENTER ID
lblno
ENTER PASSWORD
xxxxxxxx
LBL/519 STARTED AT 14:59:19 ON 02-02-81

WELCOME TO THE RECON SYSTEM.
NEW FEATURES ADDED TO RECON
1) SEARCH TRUNCATION.....SEE ?NEWS
2) FIXED DATA BASE NUMBERS..SEE ?NE2
3) DELETE LINE CAPABLILTY...SEE ?NE3
4) CONTINUOUS DISPLAY.....SEE ?NE3
OTHER NEW FEATURES:
5) COMBINE COMMAND RECOGNIZES 'AND','OR'
   AND 'NOT' IN PLACE OF '*','+',AND '-'
6) EACH LOOK COMMAND SEARCHES 200 RCRDS
```

1.2.2 Direct-dial telephone numbers

The direct-dial and Telenet rotaries and telephone ports are split between two IBM 3705 communications processors. The following is a list of telephone numbers supported on each IBM 3705. Each number is on a rotary with several lines.

Telephone Numbers for IBM 3705 Number 1

Commercial	FTS	
615/574-7620	624-7620	(8 lines, 300 baud)
615/574-7640	624-7640	(8 lines, 300 baud)
615/576-2300	626-2300	(8 lines, 300 baud)
615/576-2121	626-2121	(1200 baud, 212A Modem)

Telephone Numbers for IBM 3705 Number 2

Commercial	FTS	
615/574-7630	624-7630	(8 lines, 300 baud)
615/574-7650	624-7650	(6 lines, 300 baud)
615/574-7610	624-7610	(4 lines, 110 baud)

6 Telenet ports

1.2.3 Telenet procedures

Telenet is a public communications network that makes it possible for terminal users to dial up a computer anywhere in the country at rates which are many times lower than long-distance telephone rates. In this packet-switching network, the user dials a local node, or minicomputer, and identifies the area code and number of the desired computer, (e.g. 615 21). The message packets are transmitted to that computer via a number of other nodes; at each it is error-checked and boosted along its way.

To access DOE/RECON through Telenet, two sets of ID's and passwords are required. The Telenet ID is made up of the Oak Ridge area code and computer number, DOE, and the DOE/RECON ID. Thus for DOE/RECON ID XXX, the Telenet ID statement is "ID ;61521/DOEXXX." Corresponding to this Telenet ID is a 6-digit numeric Telenet password unique to each user, e.g. 123456.

Once the Oak Ridge computer is reached (shown by a 61521 connected message), enter "ARECON (CR)" then the DOE/RECON ID, e.g. XXX or XXXNO, and password, e.g. YYYYY, to set up a search session on DOE/RECON.

DOE/RECON itself operates in half duplex, i.e. messages travel over the communication lines in one direction at a time. Telenet, however, may be used in full or half duplex. The logon sequence for both styles is shown below.

TELENET MESSAGE	USER ACTION	EXPLANATION
	Set switches: 300 baud or 1200 baud Full duplex or Half duplex	Telenet normally works in full duplex, but may be used in half duplex by entering "half" during the logon procedure. DOE/RECON itself works in half duplex, but may be accessed through Telenet in full duplex. Half duplex allows for slightly faster typing by the searcher. Full duplex, on the other hand, validates characters sent from a terminal to a local Telenet node.
	Dial Telenet	Dial the nearest Telenet phone number corresponding to the speed of the terminal and modem being used. (See Appendix B.)
High-pitched tone	Establish connection	Place receiver in acoustic coupler or Press "DATA" button on modem

No message	(CR) (CR)	Press carriage return (CR) key twice to contact Telenet. All commands must be send to the computer by a carriage return; on some terminals this key is labeled RETURN.
Telenet 202 96R		Telenet responds with the address of the port you are on.
TERMINAL=	(CR) or ti45 (CR)	Telenet asks for terminal type. Bypass the question by a carriage return, or give the terminal model code from the Telenet literature. For many terminals the default (CR) gives satisfactory service, but for some high-speed terminals better service is obtained through using the correct terminal code.
@	half	Optional. If terminal is set at half duplex, type "half." (It will appear as hhaallff.) If terminal is set in full duplex, skip this step.
@	id ;61521/doexxx	Type ID space semicolon 61521/ DOEXXX, where XXX is the DOE/RECON password.
PASSWORD=	123456	When Telenet prompts for a password, enter your 6-digit numeric Telenet password, e.g., 123456. This is <u>not</u> your DOE/RECON password.
615 21 CONNECTED	Arecon (CR)	Your DOE/RECON logon begins here. Type Arecon (CR), that is, capital A followed by recon in capital or small letters followed by carriage return.
ENTER ID:	xxx (CR)	When DOE/RECON prompts for a user ID, enter your three-character user ID. After asking for a password the system will send a 21-line welcome message.
	xxxno (CR)	To receive a brief welcome message, enter your ID followed by "no."

ENTER PASSWORD	yyyyy (CR)	When DOE/RECON prompts for a password, enter your DOE/RECON password (up to 8 alpha-numeric characters; not the 6-digit numeric Telenet password).
WELCOME MESSAGE		DOE/RECON will give a long or short welcome message, depending on whether the ID was entered alone or with "no."

An example of a Telenet logon is shown below.

```
TELENET
415 8E

TERMINAL=

@hhaallff

@id ;61521/doelb1
PASSWORD =
******

615 21A CONNECTED
Arecon
ENTER ID
lblno
ENTER PASSWORD
********
LBL/627 STARTED AT 17:50:10 ON 03-04-81
```

DIAGNOSTICS:

Double letters

If double letters appear, the system may be working as if in full duplex while the terminal is switched to half duplex. To remedy this, the terminal may be switched to full duplex. If this occurs during the logon statement (IIDD ;;6611552211/DDOOEEXXXXXX) it may mean that Telenet did not correctly receive the word HALF. At this point, it is best to send some partial command, receive a BAD PASSWORD statement, reenter HALF (computer prints HHAALLFF), and then proceed again with the ID statement.

No printing

If the terminal is switched to full duplex but HALF is typed, Telenet will not echo any letters back, nor will the terminal type them -- though they will be received by the DOE/RECON computer. To remedy this, call Telenet by pressing @ (CR), type FULL (CR), and then type CONT (CR). Now commands should print at the terminal. Note that DOE/RECON will not acknowledge the user upon reentry.

Errors during Telenet logon

Error correction is not possible during Telenet logon; so if corrections to errors are made and sent, a BAD PASSWORD message will be returned. At this point the ID statement must be repeated, followed by the Telenet password.

Telenet logon too slow

Telenet allows about one minute for the searcher to complete a successful logon. If the logon has not been successful after one minute, Telenet will disconnect. Just dial and try again.

1.2.4 Telenet telephone numbers

Telenet telephone numbers with the corresponding speed and modem type are given in Appendix B.

Problems with Telenet should generally be referred to DOE/RECON Operations staff at the numbers given in Section 1.2.5. Local problems such as being rejected by the local Telenet node should be reported directly to Telenet at their 800 number: 800-336-0437.

1.2.5 RECON Operations telephone numbers

DOE/RECON is staffed from 9 a.m. to 8 p.m. (EST) during all working days. Operations staff are available for consultation about logon problems and for information on system problems such as downtime. The DOE/RECON Operations telephone numbers at ORNL are given below. These numbers are on a rotary and the third number (615/574-5383) is attached to an answering device. Operations staff record status messages including probable time of recovery whenever the computer is down.

DOE/RECON Operations telephone numbers:

Commercial	FTS
615/574-5381	624-5381
615/574-5382	624-5382
615/574-5383	624-5383

1.2.6 Transmitting commands

Carriage return (CR) to send

Syntax:	Command (CR)
Function:	Transmits messages to the computer

Commands are sent to DOE/RECON by a carriage return (CR). In the first pages of this manual, the (CR) symbol will be shown but later it will be omitted. However, the carriage return is always required to transmit any command to DOE/RECON.

Upper or lower case

Users may communicate with DOE/RECON in upper or lower case, with the exception of the "Arecon" connect message, (Section 1.2.1 and 1.2.3), where a capital A is required. In this manual, user actions will be shown in lower case except when embedded in text.

1.2.7 Correcting errors

For individual character errors

Syntax:	Mistake CONTROL HHHHHHH correction
Function:	Backspaces and erases errors

For line length errors

Syntax:	Mistake CONTROL X
Function:	Deletes line

Errors may be corrected before they are sent to DOE/RECON. Hold down the CONTROL key and press the H to backspace and erase each wrong character, (some terminals have a backspace key that performs the same function) or press X to delete an entire line.

If an error is sent to DOE/RECON, the system will perform the operation if possible; if not, it will transmit an error message. No harm is done; one cannot hurt the system.

1.2.8 Setting the line length

Syntax:	tls=nnn
Function:	Specifies desired line length

DOE/RECON was designed for 40 character-wide CRT screens. In 1980 the default line width was changed to 80 characters. The width may be set from 40 to 120 characters to accommodate varying paper sizes. For example,

```
tls=75
  or
tls=120
```

will set the line at 75 and 120 characters respectively.

If nothing is entered, the line width will be 80.

1.2.9 Halting DOE/RECON's output (BREAK)

It is only possible to interrupt DOE/RECON during the output phase when something is being printed at the terminal. Press the BREAK key to halt output towards the beginning of a burst of transmission. Pressing the BREAK key near the end of DOE/RECON's message may cause a disconnect.

It is not possible to halt the processing of a COMBINE command.

1.2.10 Reestablishing connection after disconnect (Warm Start)

All or part of the DOE/RECON system can go down, i.e., cease to operate properly, at any time. Depending on the part of the system affected, it may or may not be necessary to start a work session over again.

A cold start occurs when the data and/or programs have to be reloaded into the ORNL computer. When this happens, everyone must redo their work sessions. However, PRINT requests which had already been entered during the session in progress when the computer went down are normally saved and should not be requested again.

A warm start occurs when the problem causing the downtime can be corrected without reloading the computer. Dialup users must call back within 10 minutes in order to save their data and continue their work session. During logon, enter the ID/number assigned to the work session by DOE/RECON at the previous logon, e.g. LBL/627. DOE/RECON will send a "RECONNECT" message to confirm the warm start. Use a SET HISTORY command to verify that previous search steps have been saved. (See Section 2.7, Set History, for information concerning the use of the "@" symbol when logged in via Telenet.)

An example of a disconnect and reconnect is given below.

```
[illegible]

Arecon
 ENTER ID
1b1/627
 ENTER PASSWORD
[illegible]
 LBL/  627 RESTARTED AT 18:16:55
```

1.2.11 Logging off

```
Syntax:     =stop
Function:   ends search session
```

Logging off may be accomplished by using the =STOP command. This is DOE/RECON's END (=) command coupled with STOP for a final logoff. (See also END, Section 2.13)

Note that DOE/RECON releases you at this point, giving you a time-of-day message. The ORNL computer still is available for use, however, and will prompt you:

select a system

type recon, tlogon, or help

To finish disconnecting, simply hang up.

An example of the =STOP command is given below.

```
ENTER:=stop
>PROCESSING<
STOPPED AT 15:00:01 ON 02-02-81
```

2.1 COMMANDS SUMMARY

DOE/RECON commands are used within the system to locate, process, and/or output data. These commands are common to all data bases on the system.

DOE/RECON commands are words or symbols. Historically, the symbols appeared on shift keys of the numerals in sequential order. Owing to variations in keyboards on different terminals, the command keys may no longer be in sequence.

The English commands which act on text (i.e., SELECT, EXPAND, HELP) must be followed by a space:

ENTER:e solar cells

Spacing for the other English commands is not crucial.

However, the Symbol commands must not be followed by a space:

ENTER:"solar cells

The following is a brief description of the DOE/RECON commands:

COMMAND	FUNCTION	EXAMPLE(S)
HELP H ?	Initiates online help package. For more information on HELP commands, enter ?. For more information on a specific command, enter ? with the name of command, or with command symbol (except page).	HELP H COM ?COMBINE
BEGIN B !	BEGINs search process. Initiates search identification page or puts user directly into file requested. For more information, enter ?BEG.	BEGIN B 1
EXPAND E "	Shows a portion of the index which the user requested (in alphabetical order). To directly display thesaurus related terms enter "(thesaurus term) or E (thesaurus term). For more information, enter ?EXP.	EXPAND ALLOYS E THERMAL EXPANSION E AU=SMITH, K E (ALLOYS)
SELECT S #	SELECTs terms directly or indirectly by using reference numbers. For more information, enter ?SEL.	SELECT ALLOYS S WATER QUALITY S E6;S R2

COMBINE C $	COMBINEs sets in Boolean logic by using the operators + (OR), * (AND), and - (NOT). The sequence of operations in a COMBINE expression is: / ( ) NOT AND OR and then left to right. For more information, enter ?COM.	COMBINE 1 AND 2 C 1-4/OR C 1 AND 2
HISTORY SETS DS @	Displays the list of sets that have been created within the present work session. If you are using Telenet, enter @b (b=blank). For more information, enter ?HIS.	SETS DS @
DISPLAY D %	DISPLAYs search results online. For DISPLAYing citations in a set, enter Dset number/format. Once DISPLAY of a set has begun, use D to advance, D- to back up. For single items, use Dvolume document type code accession number. For more information, enter ?DIS; enter ?FOR for discussion of formats.	DISPLAY 8 D 80R1242 D 5/2
PAGE P MORE M 0 (zero)	Turns page. 0- backs up page (except within DISPLAY command). For more information, enter ?PAG.	PAGE P M
LIMIT L)	LIMITs a set to citations of specified volume range, document type, and/or citation number range. For more information, enter ?LIM.	LIMIT 5/78-80 L 2/ALL/J L 4//R,X,U
LOOK LO LK	Searches within an established set for words or phrases occurring in the title and/or abstract. For more information, enter ?LOO.	LOOK 4/A,T/'BROWN' LK 5/A/'BROWN HAIR' + 'BLUE EYES'
KEEP K (	Transfers items to set 99 for later use. For more information, enter ?KEE.	KEEP 5/3-6 K 8/10 K 78X2345
PRINT PR &	Causes search results to be PRINTed offline and mailed to user. Uses same formats as DISPLAY. For more information, enter ?PRI.	PRINT 7/0/1-695 PR 12/2
DELETE DE DL	DELETEs a request for print(s) requested earlier in the same work session. For more information, enter ?DEL.	DELETE/6 DE/6

END EN =	ENDs a search session and deletes all sets. User is still connected to DOE/RECON. For more information, enter ?END.	END EN =
=STOP	ENDs search session and deletes all sets. User is disconnected from DOE/RECON but must break telephone connection to disconnect from the ORNL computer.	=STOP

Only the first characters of the English language commands need to be keyed in, but the full command or portions of it are also acceptable; e.g., B, BE, BEG, BEGI, BEGIN will all initiate the BEGIN command.

In the cases where several commands begin with the same letter, the first entry in the above list will be the one executed by the single letter command. To execute the other commands, a string large enough to uniquely identify the desired command must be specified; such commands have been listed above with a two letter code. For example, both EXPAND and END start with the letter "E". If the user inputs only "E," EXPAND will be the command executed. To have the END command executed, the user must input at least "EN."

2.1.1 A simple search

(Examples in this manual are from the DOE Energy Data Base.)

This search shows the simplicity and power of the DOE/RECON system. The problem is to find articles on retrofitting residential buildings for solar water heating.

B 1	(BEGIN a new search in DOE Energy Data Base)
s solar water heating	(SELECT term, create set 1)
s residential buildings	(SELECT term, create set 2)
s retrofitting	(SELECT term, create set 3)
c 1 and 2 and 3	(COMBINE set 1 AND set 2 AND set 3, yielding set 4)
d 4/3	(DISPLAY set 4 online in format 3, titles)
pr 4	(PRINT set 4 offline, default format 2)
=stop	(END session and disconnect from computer)

2.1.2 Stacking

Syntax:	command;command;command (CR)
Function:	Sends several commands in one transmission

DOE/RECON will accept a series of up to 5 commands with one (CR). The individual commands must be complete, and must be separated by semicolons. The series should end with a command rather than semicolon and may not exceed 60 characters. All 5 commands will be executed and search results will be returned in one burst before the program works on another user's commands. (This is the reason for the limit of 5 commands.)

The search in 2.1.1 could be done as follows:

```
s solar water heating;s residential buildings (CR)
s retrofitting;c  1 and 2 and 3 (CR)
```

2.1.3 Symbol Commands

For those familiar with symbol commands, the following search employing them is included. Henceforth, the language commands will be featured because they are easier to use.

!1	(BEGIN a new search in DOE Energy Data Base)
#solar water heating	(SELECT term, create set 1)
#residential buildings	(SELECT term, create set 2)
#retrofitting	(SELECT term, create set 3)
$1*2*3	(COMBINE set 1 AND set 2 AND set 3, yielding set 4)
%4/3	(DISPLAY set 4 online in format 3, titles)
&4	(PRINT set 4 offline, default format 2)
=stop	(END session and disconnect from computer

2.2 THE HELP PACKAGE

Syntax:	h (text) ? (text)
Function:	Provides reference information including the use of DOE/RECON commands, data included in files, changes to the system.

DOE/RECON has an extensive set of HELP pages, accessible through the question mark and various 3-character labels.

The HELP command entered as ? will initiate an online tutorial package to guide the user through a brief search.

To read more HELP pages within a section, enter ?+. (?+ will appear in the lower right-hand corner of the display if more related pages exist.) To return to a preceding page, enter ?-.

Some general HELP commands are:

?news	Gives the latest changes to the system
help cov	Gives an alphabetical list of all files and their currency
h whi	Verifies the data base to which you are presently connected
?file name	Gives scope and coverage of the data base, its currency and the available searchable fields. The file name is three characters long, e.g., ?GAP
h ind	Gives a partial index to the on-line users manual
?lis	Gives a basic list of DOE/RECON commands
?misc	Gives a list of HELP commands

Some specific HELP commands for use with the Energy Data Base are:

?edu	Gives the accession number ranges corresponding to update issues in the Energy Data Base (these are used in the LIMIT command)
help abr	Lists abbreviations used in the availability fields
?poa	Lists foreign patent office addresses
?prc	Lists codes in NTIS price list

2.3 STARTING A SEARCH

There are two ways to use the BEGIN command. Section 2.3.1 describes the long BEGIN, Section 2.3.2 describes the short.

2.3.1 BEGIN (long)

Syntax: B
!

Function:
- BEGINs new session
- Clears previous work session and set history
- Prompts for printout identification
- Gives list of available data bases
- Starts set numbering at set 1

The BEGIN command is used to enter a file after one has logged onto DOE/RECON or at any time during a search to change into another file. To BEGIN a work session, enter

B (CR)

DOE/RECON will erase any sets remaining in the storage area from a previous work session and then prompt the searcher to provide an address or identification for the printout.

The search identification page provides ten text lines, with 40 characters per line, in which the searcher can enter a full address, search title, comments, etc. To enter a label, type one line at a time and press the carriage return (CR) at the end of each line. After the last line has been typed, return to a new line, type one blank space, and then press the carriage return.

These text lines will appear in a box on the first page of the offline printout, and are for the searcher's use in identifying or forwarding the printout. They do NOT constitute the address to which the printout is mailed.

```
ENTER: b
>PROCESSING<
RECON SEARCH IDENTIFICATION PAGE:

RECON PUTS WHATEVER YOU TYPE IN THE TEN
LINES STARTING WITH THE WORD "ENTER:" IN
THE BOX BEFORE YOUR PRINTS. PRINTS ARE
MAILED TO THE PERSON RESPONSIBLE FOR THE
RECON ID. PLEASE SUPPLY ENOUGH DATA SO
THAT THIS PERSON CAN FORWARD YOUR
RESULTS.

THERE IS ENOUGH ROOM BELOW FOR A FULL
ADDRESS, SEARCH TITLE, COMMENTS, ETC.
IF YOU WISH. THE MAXIMUM RESTRICTIONS
ARE 10 LINES WITH 40 CHARACTERS PER
LINE.

TYPE ONE BLANK CHARACTER AND THEN THE
-RETURN- KEY AFTER TYPING IN ALL DATA.



ENTER:dj for john smith
bldg 20 room 5
Solar collectors
EDB 8024
2/2/81
_
```

The DOE/RECON mailing address is that of the person responsible for the DOE/RECON ID and is stored separately in the user ID authority file. To change a mailing address, contact DOE/RECON Operations (see 1.2.5).

If one does not wish to enter anything on the search identification page, one can type a blank space and then press the carriage return. For example:

ENTER:␣ (CR)

In this case, the printout will be unlabeled.

After a label or blank space has been entered, DOE/RECON will display a list of data bases available for searching:

```
You may access the files below:

 1 EDB DOE Energy Database (TIC)
 2 NSA Nuclear Science Abstracts (TIC)
 3 RIP Energy Research in Progress (DOE)
 4 GAP General and Practical Info.(DOE)
 5 IPS Issues and Policy Summaries (TIC)
 6 PRD Power Reactor Docket Inf(TIC/NRC)
 7 FED Federal Energy Data Indx(DOE/EIA)
 8 NSC Nuclear Safety Info. Cent. (NSIC)
 9 WRA Water Resources Abstracts (WRSIC)
10 WRE Water Resource Research (WRSIC)
11 EMI Environmental Mutagens (EMIC)
12 ERG Enhanced Oil & Gas Recovery(BERC)
13 RSI Radiation Shielding Info. (RSIC)
14 ETI Environmental Teratology (ETIC)
15 CIM Central Inventory of Models (DOE)
16 NSR Nuclear Structure Reference (NDP)
17 ESI Env. Science Index (EIC)
18 EIA Energy Information Abstracts(EIC)

   Full list of available files PAGE 2

19 NRC National Referral Center (LC)
20 RSC Radiation Shielding Codes(RSIC)
21 EIS Epidemiology Info. System(TIRC)
22 SLR Solar Data Bases (Franklin Inst.)
23 NES National Energy Software (NESC)
24 TUL Tulsa Data Base (U.Tulsa)
27 SER TIC Serial Titles (TIC)
28 SUP TIC Thesaurus Supplement (TIC)
29 NTB NASA Tech Brief File (NASA)
30 GID Government & Industry Data Exchg.
31 OGR Oil & Gas Reserve File
36 FRC Fallout Records Centralization
```

These data bases are listed by number. A searcher's list may not include all of the data bases on DOE/RECON because a few data bases are restricted under contractual agreement with their supplier. These missing data bases will result in a skipped number in the numerical sequence. However, numbering is consistent so that each data base is identified by the same number for all users.

Each data base is accessed by its number. To access the Energy Data Base (EDB), for example, enter its number (1), and press the carriage return:

1 (CR)

DOE/RECON will give an error message if anything other than a valid file number, a HELP, or an END command is entered at this point. If a HELP command is entered, the system still expects a valid file number after the command is finished.

When a data base is chosen, DOE/RECON will respond with a message:

BEGIN SESSION 006--FILE 01 WAS SELECTED

which tells the searcher that this is the sixth work session of the day on this port and file number 1 has been chosen. DOE/RECON will then display the first page of the introduction to the data base, which usually includes information on the size of the file, the contact person, and available indexes.

Sometimes, this introductory information may cover several pages. Further pages may be seen by entering ?+ (CR).

```
ENTER:1
>PROCESSING<
BEGIN SESSION 0017--FILE 01 WAS SELECTED
?EDB DOE Energy Database (TIC)
  (649,699 Items 74:01-80:24)

This file contains all unclassified
energy-related scientific and technical
information processed at the Technical
Information Center (TIC). It includes
all nuclear information processed since
June 1976 with the exception of power
reactor docket information. See the
PRD file for this information.

For nuclear information processed prior
to June 1976, please see the NSA file.

For further information contact:
Dave Bost, DOE/TIC, Oak Ridge, TN
  615-576-1155   FTS: 626-1155

Enter ?+ to see the available indexes.

                                  * ?+
```

Energy Data Base Page 2.

Indexes include:

AU= Author	YR= Year of Pub.
TL= Title Words	LA= Language
RN= Report No.	AJ= Announcement Jo.
RP= Report Prefix	DC= Distribution Cat.
CS= Corp. Source	DO= Document Origin
IC= Corp. Code	PC= Primary Cat.
CN= Contract No.	NC= Subject Cat.
CD= Contract Code	IT= All Descriptors
CO= Country of Aff.	SD= Selected Descr.
CP= Country of Pub.	MD= Major Descr.
PN= Patent Nation	DT= Data Tags
JO= Journal CODEN	

NOTE: CS= Includes corporate author, patent assignee, and author affiliation.

Energy Data Base Page 3.

In use of the LOOK command:
'T' searches the title and augmentation fields.
'A' searches the abstract.

Enter ?LOOK for information on the use of this command.

Since most of the EDB records contain an abstract, the use of format 0 or 5 is suggested for PRINT commands.

You may use ?DTY for a list of the document type codes and ?AVA for information on the availability of the documents themselves. ?EDU gives the update status of this file and ?ECO gives category codes.

ENERGY DATA BASE PAGE 4.

Enter ?ABV for Abbreviations used in the Availability Statements and ?PRC for the NTIS Price Codes Table. Enter ?POA for Patent Office Addresses.

2.3.2 BEGIN (short)

Syntax: B file no.
!file no.

Function:
- Begins new session
- Clears previous search session and set history
- Skips search identification page, thus, printout will be unlabeled
- Puts the searcher directly into the data base requested
- Starts set numbering with set 1

The short BEGIN is used when the searcher knows which file number to choose and does not need an identification label for the printout, or does not need a printout. To directly access the Energy Data Base (EDB), enter:

B 1 (CR)

DOE/RECON will respond with a message giving the work session number and the file chosen, and then the introductory page of that file.

2.4 BROWSING THE INDEXED FIELDS

2.4.1 Indexes

- All indexes are identified by two-letter prefixes
- Indexes are searchable by prefix
- The IT= index is the default index and therefore is searchable with or without a prefix
- Choosing the appropriate index facilitates searching

Each data base on DOE/RECON contains indexes for the searchable fields which can be used in searching that data base. These indexes may vary according to the way each file was constructed. Each index is identified by a two-letter code, or prefix, such as AU= for personal author, IT= for index term, and TL= for title words.

The indexes for each data base are listed on the introductory page(s) shown in response to a BEGIN command or a HELP (file name) command for that data base. (Shown in 2.3.1)

The prefixes must be used to request information from a particular index with the exception of the IT= index which is the default index. This means that the IT= index is searchable with or without its prefix.

The most commonly used indexes in searching, in addition to the index terms, are the author, corporate source, title word, and report number indexes. Check the file identification page(s) to indentify correct prefixes for different files. On DOE/RECON, indexes are used in conjunction with the EXPAND or SELECT command (see Sections 2.4.2, 2.4.3, and 2.5).

2.4.2 EXPAND

Syntax: e prefix=term
"prefix=term
or
"descriptor
e descriptor

Function:
- Shows a portion of the index in alphabetical order
- Shows a descriptor in alphabetical context of neighboring descriptors
- Shows a maximum of 40 entries with each EXPAND command
- Useful for reviewing exact format and number of postings of an index entry

The EXPAND command shows an alphabetized portion of the index which the searcher requested. The requested descriptor and those surrounding it are shown: up to a maximum of 40 entries can be displayed with each EXPAND command. This command allows the user to see the number of citations in the data base using that descriptor, if any, and the number of its related terms, if any.

```
ENTER:e solar collectors
>PROCESSING<
  EXPAND  IT=SOLAR COLLECTORS
   REF  DESCRIPTOR                CIT   RT
   E01  IT=SOLAR BATTERIES_              1
   E02  IT=SOLAR BATTERY
         CHARGERS_____             53    2
   E03  IT=SOLAR CELL
         ARRAYS_______           2286    6
   E04  IT=SOLAR CELL
         RECEIVERS____                 1
   E05  IT=SOLAR CELLS_____        6994   19
  -E06  IT=SOLAR COLLECTORS        8979   20
   E07  IT=SOLAR
         CONCENTRATORS_____        2489   10
   E08  IT=SOLAR CONSTANT__          83    1
   E09  IT=SOLAR CONTROL
         FILMS________             5     5
   E10  IT=SOLAR COOKERS___         135    2
   E11  IT=SOLAR COOKING___          54    2
   E12  IT=SOLAR COOLING
         SYSTEMS______           2869    7
   E13  IT=SOLAR CORONA____         977    2
   E14  IT=SOLAR CYCLE_____         423    3
                                  -MORE-
```

In this example, REF stands for reference number, the "-" before the E06 indicates which entry the searcher has input, and E06 is the reference number for that entry in this EXPAND command. CIT stands for the number of citations or postings for each entry, and RT stands for related terms.

The EXPAND command is useful for reviewing the exact entry format in indexes such as author (AU=), title word (TL=), or corporate source (CS=), which tend to have variations in entry format.

To locate, or EXPAND, the author index entry for Z. Jones, for example, enter the expression

e au=jones, z.

where AU= tells DOE/RECON which index to search and JONES, Z. tells DOE/RECON which entry to search for. If DOE/RECON does not find an entry identical to the one the searcher has given, it will insert that requested entry temporarily in alphabetical order within the index section and display that part of the index. The EXPANDed portion of the index will then appear as

```
ENTER:e au=jones, z
>PROCESSING<
  EXPAND  AU=JONES, Z
   REF  DESCRIPTOR                CIT   RT
   E01  AU=JONES, W.V. . DE
        PT. OF PHYSICS AND_        1
   E02  AU=JONES, W.V. )___        2
   E03  AU=JONES, W.W._____        9
  -E04  AU=JONES, Z________
   E05  AU=JONESCO-FARCA, F
        . . ABT. FUER MEDIZ        1
   E06  AU=JONESCU, M.E.___        1
   E07  AU=JONESS, J.L._____       2
   E08  AU=JONG HEE CHA_____       1
   E09  AU=JONG, A.F.M. DE_        1
   E10  AU=JONG, A.G. DE___        2
   E11  AU=JONG, C._________       1
   E12  AU=JONG, D._________       1
   E13  AU=JONG, J. DE_____        1
   E14  AU=JONG, K.H. DE___        1
   E15  AU=JONG, M._________       1
   E16  AU=JONG, M.S. DE___        2
   E17  AU=JONG, R.A._____         9
   E18  AU=JONGBLOED, A.A._        1
                                  -MORE-
```

In this case, there are neither postings nor related terms for Z. JONES.

2.4.3 EXPAND related terms

Syntax:	"reference number [E number, labeled REF No.]
	e related term reference number [R. No.]
Function:	Allows browsing of thesaurus related terms
Restriction:	Available only on data bases with online thesaurus and related terms

To browse the related terms of a descriptor, the searcher can EXPAND its reference number. For example,

e e6

will display the related terms of SOLAR COLLECTORS. (Note that the zero in E06 can be omitted in the EXPAND command.)

```
ENTER:e e6
>PROCESSING<
REL. KEYS E6    IT=SOLAR COLLECTORS
T R.NO. DESCRIPTOR                CIT   RT
  R0000 IT=SOLAR COLLECTORS      8979   20
1 R0001 IT=SOLAR EQUIPMENT_      5089   26
2 R0002 IT=COMBINED
          COLLECTORS_________     105    3
2 R0003 IT=CONCENTRATING
          COLLECTORS_________    1279    8
2 R0004 IT=EVACUATED
          COLLECTORS_________     311    2
2 R0005 IT=FLAT PLATE
          COLLECTORS_________    3142    3
2 R0006 IT=INFLATABLE
          COLLECTORS_________      18    2
2 R0007 IT=SOLAR AIR
          HEATERS____________    1005    4
2 R0008 IT=SOLAR PONDS_____      385    5
2 R0009 IT=UNGLAZED SOLAR
          COLLECTORS_________      24    1
3 R0010 IT=BLACK LIQUIDS___      40     4
3 R0011 IT=CENTRAL
          RECEIVERS__________    482    5
                                -MORE-
```

The numbers under the T column represent the hierarchical relationship of a related term (e.g., SOLAR PONDS) to the term expanded (i.e., SOLAR COLLECTORS) within the online thesaurus for the data base in which you are working. The relationships, indicated by number, are given below. The majority of thesaurus entries show the first three relationships.

1 BROADER TERM (BT): a term representing a broader class of concepts; it is more inclusive than the term expanded.

2 NARROWER TERM (NT): a term referring to a member of the concept class; it is more restrictive than the term expanded.

3 RELATED TERM (RT): a term which might provide additional information, but which is usually not a member of the same concept class as the term expanded.

4 USE: this term is currently being used for indexing rather than the term expanded.

5 USE FOR: the term expanded is currently being used for indexing instead of this term.

6 SEE FOR: the term expanded is a related specific term which is used for indexing instead of this term.

R NO. is the related term reference number. To browse the related terms of SOLAR PONDS, its R. NO. can be EXPANDed, e.g.,

e r8

will result in the following display:

```
ENTER:e r8
>PROCESSING<
REL. KEYS R8    IT=SOLAR PONDS
T R.NO. DESCRIPTOR                CIT   RT
2 R0000 IT=SOLAR PONDS_____       374    5
1 R0001 IT=PONDS___________      1020    4
1 R0002 IT=SOLAR COLLECTORS      8710   20
2 R0003 IT=ROOF PONDS______        43    4
3 R0004 IT=INFLATABLE
          COLLECTORS________       17    2
3 R0005 IT=SOLAR WATER
          HEATERS___________     2702    8
```

CAUTION:

The EXPAND related terms command provides an expedient way of browsing online the hierarchical structure of thesaurus terms. However, the searcher should be aware that the online display of related terms is NOT the exact equivalent of an entry in the Energy Information Data Base: Subject Thesaurus (DOE/TIC-7000) . While all Related Terms (RTs) are displayed online, only the first level of Broader Terms (BTls) and Narrower Terms (NTls) are shown. However, the postings of all levels of Narrower Terms are included in the postings of Broader Terms. In addition, the thesaurus entry of a descriptor may include other information, such as a definition, the date when a descriptor came into use, and/or special remarks.

To sum up, the EXPAND related terms command provides a good way to browse related terms online, but generally it does not give as complete information on the descriptors as does the printed thesaurus entry. On the other hand, the online display of related terms is more up-to-date and will contain descriptors recently added to the thesaurus.

2.4.4 Direct EXPAND of thesaurus related terms

Syntax:	e (descriptor) "(descriptor)
Function:	Provides one-step display of thesaurus related terms

If one knows the correct entry format of a descriptor, and wants to browse its related terms, one may bypass the two-step procedure of EXPANDing a descriptor and then EXPANDing its reference number. For example:

e (heat storage)

will display directly the related terms:

```
ENTER:e (Heat storage)
>PROCESSING<
REL. KEYS IT=HEAT STORAGE
T R.NO. DESCRIPTOR                    CIT   RT
  R0000 IT=HEAT STORAGE____          4199   13
1 R0001 IT=ENERGY STORAGE__          7496   20
2 R0002 IT=LATENT HEAT
          STORAGE_____________        501    5
2 R0003 IT=SENSIBLE HEAT
          STORAGE_____________       1563    7
2 R0004 IT=THERMOCHEMICAL
          HEAT STORAGE_______        265    7
3 R0005 IT=ANNUAL ENERGY
          STORAGE_____________         54    3
3 R0006 IT=COLD STORAGE____            74    5
3 R0007 IT=ENERGY STORAGE
          SYSTEMS_____________       8374   10
3 R0008 IT=REGENERATION____          1067    4
3 R0009 IT=REGENERATORS____           303    5
3 R0010 IT=ROCK BEDS_______           471    3
3 R0011 IT=THERMAL ENERGY
          STORAGE EQUIPMENT_         1531   12
3 R0012 IT=THERMIC DIODE
          SOLAR PANELS_______           4    3
                                     -MORE-
```

2.5 CHOOSING TERMS AND CREATING SETS

The SELECT command stores citation numbers of descriptors or other data elements as numbered sets in the searcher's work area. Once a set is SELECTed, the citations within that set may be DISPLAYed in different formats, be COMBINEd with those in other sets, or be PRINTed. DOE/RECON allows for the formulation of up to 98 sets during a work session and also maintains a special set, number 99, for storing selected citations for later output (see KEEP, Section 2.10). Sets can be SELECTed directly by using descriptors or other data elements and indirectly by using reference numbers from the EXPAND command.

2.5.1 Direct SELECT

Syntax:	s prefix=term #prefix=term s descriptor #descriptor
Function:	Stores a search term and postings as a numbered set in the searcher's work area

To SELECT a set directly, the searcher should enter the desired descriptor or data element,

```
s residential buildings
```

As with the EXPAND command, the IT= index is the default index and no prefix is needed. DOE/RECON will respond with the following message:

```
1     5347     IT=RESIDENTIAL BUILDINGS
```

where 1 is the set number, 5347 is the number of postings in the set, and IT=RESIDENTIAL BUILDINGS describes the set SELECTed.

If one SELECTs a descriptor or data element not in the index, e.g.,

```
#residential building
```

DOE/RECON will respond with

```
IT=RESIDENTIAL BUILDING-----NOT FOUND
```

because DOE/RECON will only search for citations using the exact term the searcher has entered. In these instances, it is advisable to EXPAND the search term, and browse neighboring terms to make sure that the correct form has been used.

2.5.2 Indirect SELECT

After using an EXPAND command, the searcher may SELECT one or more reference numbers, a range of reference numbers, or a combination of the above from the EXPAND display. These numbers can be either "E" or "R" reference numbers. A single set or several sets can be created. The SELECT command will retrieve citations from the most recent EXPAND command.

a. SELECT into one set one or more nonconsecutive reference numbers, a range of consecutive reference numbers, or a combination of both.

Syntax:	s reference number s reference number, reference number #first reference number-last reference number #reference number, first reference number-last reference number
Function:	Creates a set from one or more reference numbers

The searcher may enter SELECT commands by "E" or "R" reference number, so that: (the following have been SELECTed from EXPANDs shown in Section 2.4)

```
s e06          (e solar collectors)          2.4.2
```

will select

```
2      8979     IT=SOLAR COLLECTORS
```

and

```
s r4           (e (heat storage))            2.4.4
```

will select

```
3       283     IT=THERMOCHEMICAL HEAT STORAGE
```

As with the EXPAND command, the zero in E06 and R04 can be omitted.

The SELECT command may be used to combine into one set several non-consecutive "E" or "R" reference numbers producing a set with no duplicate citation numbers, e.g.,

```
s e5,e7,e9     (e solar collectors)          2.4.2
```

will produce the following set

```
4      9097     E5,E7,E9
```

Since DOE/RECON uses a logical "OR" to combine the numbers, this type of selection will take almost as long as SELECTing each reference number separately and then COMBINing the resulting sets (see COMBINE command, Section 2.6). It does, however, reduce the number of sets the searcher will be working with during the session.

The searcher may SELECT several adjacent "E" or "R" reference numbers to form a single set by entering

```
s r5-r8        (e e6  [solar collectors])  2.4.3
```

which will result in

```
5     4145     R5-R8
```

Here DOE/RECON performs an "OR" combine command as it processes the range selection and puts the result in a new set.

The searcher may also SELECT a combination of nonconsecutive and consecutive reference numbers to form a set, e.g.,

```
s e1,e5,e10-e12  (e solar collectors)      2.4.2
```

will result in

```
6     9968      E1,E5,E10-E12
```

b. SELECT into <u>different</u> sets a range of consecutive reference numbers.

Syntax:	s first reference number:last reference number
Function:	Creates separate sets from two or more reference numbers

This type of selection allows the searcher to form separate sets for adjacent "E" or "R" reference numbers without individually selecting each number. For example:

```
s r2:r5        (e e6 [solar collectors])   2.4.3
```

will select R2, R3, R4 and R5 into separate sets:

```
ENTER:s r2:r5
>PROCESSING<
   7    105 IT=COMBINED COLLECTORS
   8   1279 IT=CONCENTRATING COLLECTORS
   9    311 IT=EVACUATED COLLECTORS
  10   3142 IT=FLAT PLATE COLLECTORS
```

More sets are generated as a result, but less processing time is required with this command since DOE/RECON does not perform any COMBINE operation.

CAUTION:

A maximum of 98 sets can be created within a single search session; set 99 is set aside for the KEEP command (see Section 2.10). The searcher should finish up the search before using up the 98 sets. DOE/RECON will not give any warning until set 98 is created:

SET LIMIT 98, REACHED--GIVE PRINT AND END

2.5.3 SELECT with truncation

Syntax:	s tl=word$	(to retrieve "word" and "words" using title index)
	s au=lastname, $	(to retrieve all authors whose last name is the one specified)
Function:	Allows retrieval on a word stem	

To search on a word stem, append the dollar sign "$" to the stem and then SELECT:

s au=jones, $	will result in a set of all authors whose last name is Jones; first name unspecified,
s au=jones, d$	will result in a set of all authors whose last name is Jones and whose first initial is D; second initial unspecified,
s tl=building$	will result in a set containing tl=building and tl=buildings.

CAUTION:

Care must be used when truncating short words. Truncated words which would result in a stem of three or fewer letters should be SELECTed by specifying all variations, (e.g. s tl=cat$ will retrieve cat and cats, but also catabolic through catalysts to CAT1AT3 for a total of 165 different terms on EDB!)

2.5.4 SELECT whole file

```
Syntax:  s aleph-null
         #aleph-null  (for RSI)

         s all records  (for IPS, FED, EIS)
```

This command is only available on data bases with fewer than 10,000 entries. When a data base is fairly small, the searcher may wish to form a set of the entire file and then eliminate irrelevant entries by using "NOT" COMBINE commands (see COMBINE, Section 2.6). A special descriptor, ALEPH-NULL, and more recently, ALL RECORDS, is used for this type of selection. For example, in the Federal Energy Data Index (FED) data base, entering:

```
s all records
```

will result in

```
1      2930      IT=all records
```

2930 represents the number of postings currently in the FED data base.

2.6 COMBINING TERMS

The COMBINE command is used to produce new sets by the logical combination of sets already SELECTed. The logic is based on Boolean algebra.

The available logical operators are:

FUNCTION	OPERATOR
OR	or +
AND	and *
NOT	not -
slash	/
parentheses	( )

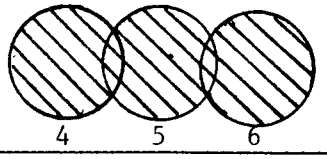
The COMBINE command can be used to broaden, narrow or exclude concepts from a search. It is the most powerful feature in searching because it allows one to manipulate the information that has been SELECTed and tailor it as needed.

2.6.1 OR logic

```
Syntax:    c set number or set number
           $set number+set number

           c set number-set number/or   (range combine)
           $set number-set number/+

Function:  . Broadens search concept

           . Eliminates duplicates
```

OR logic is used to broaden a search concept by combining two or more similar concepts or alternatives. To COMBINE set 4 OR set 5 OR set 6, enter

c 4 or 5 or 6
or
c 6 or 5 or 4




```
ENTER:c 4 or 5 or 6;c 6 or 5 or 4
>PROCESSING<
  11  15253 4 OR 5 OR 6
  12  15253 6 OR 5 OR 4
```

The order of set numbers within an OR logic COMBINE statement is not important. A new set will be created containing all citations that are in set 1, set 2, or both sets. Citations in both set 1 and set 2 will appear only once because OR automatically eliminates the duplicates.

The searcher may OR as many sets together as desired, so long as the line length does not exceed 60 characters, e.g.,

c 1 or 2 or 3 or 5...

However, if each of these sets has large postings, it will require more computer time to process each set to eliminate the duplicates.

If the sets to be ORed are in sequence, i.e., in consecutive order, instead of ORing the sets separately, as in

c 7 or 8 or 9 or 10

the simplified format of a range command is:

c 7-10/or

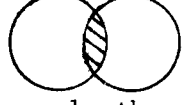
which will result in the same set

```
ENTER:c 7-10/or;c 7 or 8 or 9 or 10
>PROCESSING<
  13    4547 7-10/OR
  14    4547 7 OR 8 OR 9 OR 10
```

2.6.2 AND logic

```
Syntax:   c set number and set number
          $set number * set number
          c set number-set number/and    (range combine)

Function: Narrows a search by requesting the co-occurence of
          two or more concepts
```

The AND logic is used to narrow a search by requesting the co-occurrence of two or more concepts. To COMBINE set 1 AND set 2, enter:

c 1 and 2 

A new set will be created containing only the citations that are in both set 1 and set 2. (As with the OR logic, the order of set numbers within the AND logic is not important.)

The searcher may COMBINE several sets with AND logic, e.g.,

c 1 and 2 and (12 or 13)

```
ENTER:c 1 and 2 and (12 or 13)
>PROCESSING<
  15     847 1 AND 2 AND (12 OR 13)
```

If the sets are consecutive, one may also use the simplified format of a range combine:

c 1-3/and

CAUTION:

The more concepts a searcher ANDs together, the narrower the result will be. Usually two or three ANDs are sufficient to retrieve by subject. If no citations are retrieved, one may wish to review the search strategy to see if it needs to be broadened.

2.6.3 NOT logic

Syntax: c set number not set number
$set number-set number

Function: Narrows a search by excluding or negating concept(s)

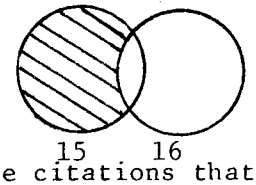
NOT logic is used to narrow a search by excluding or negating concept(s) from a set. (Each concept must be SELECTed before it can be COMBINEd. Therefore to COMBINE set 16 NOT foreign language documents, LA=foreign must first be SELECTED.)

s la=foreign

16 144563 LA=FOREIGN

To COMBINE set 15 NOT set 16, enter

c 15 not 16



A third set will be created containing all the citations that are in set 15, but not in set 16, i.e., about solar collectors but not in a foreign language.

When using NOT, it is important which set number comes first in the expression since C 15 NOT 16 will result in

17 751 15 not 16

which contains all citations that are in set 15, but not in set 16. Conversely, C 16-15 will result in a different set

18 144467 16 not 15

which contains all citations that are in set 16, but not in set 15.

There is no simplified format for NOT logic. If the searcher wishes to exclude several concepts from a set, the following can be done:

```
c 1-2-3-4-5
    or
c 1-(2+3+4+5)
    or
c 1 not (2-5/or)
```

CAUTION:

The searcher should be cautious in using NOT logic because the citations excluded may also contain relevant information. In general, it is better to state one's information needs positively.

Note that the NOT statement $1-3 is similar to the first part of a range COMBINE, e.g. $1-3/+. If one accidentally enters $1-3 NOT logic will be executed rather than the intended OR logic.

2.6.4 Priority of logical operators

When several logical operators are used within one COMBINE statement, the order in which the logical operators are processed is very important. DOE/RECON processes operators according to the following sequence:

/ ( ) not and or

/ ( ) - * +

and then left to right. For example, in the COMBINE statement

c 1 and (2 or 3 or 4) not 5

the operations within the parentheses ( ) will be processed first, then the NOT (-) logic and the AND (*) logic.

If the statement is written without the parentheses, e.g.,

c 1 and 2 or 3 or 4 not 5

the processing sequence will be quite different: first the NOT (-) logic, then the AND (*) logic and finally the OR (+) logic. Hence, the search results will be different.

If there is any doubt about the order of operations in an expression, either use parentheses to designate the desired order or break up long and complicated expressions into shorter, simpler segments.

2.7 SUMMARIZING THE SEARCH: SET HISTORY

```
Syntax:    history
           sets
           ds
           @

Function:  Summarizes search results
```

The set history command gives a concise summary of the search transactions since the last BEGIN command. It is particularly helpful for users of CRT terminals.

```
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  IT=RESIDENTIAL
         BUILDINGS_____          5347
     2  IT=SOLAR COLLECTORS       8979
     3  IT=THERMOCHEMICAL
         HEAT STORAGE_____        283
     4  E5,E7,E9_____             9097
EXPAND  IT=SOLAR COLLECTORS
     5  R5-R8_____                4145
REL. T  IT=SOLAR COLLECTORS
     6  E1,E5,E10-E12_____        9968
EXPAND  IT=SOLAR COLLECTORS
     7  IT=COMBINED
         COLLECTORS_____          105
     8  IT=CONCENTRATING
         COLLECTORS_____          1279
     9  IT=EVACUATED
         COLLECTORS_____          311
    10  IT=FLAT PLATE
         COLLECTORS_____          3142
    11  4 OR 5 OR 6_____          15253
                                   -MORE-
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
    12  6 OR 5 OR 4_____          15253
    13  7-10/OR_____              4547
    14  7 OR 8 OR 9 OR 10__       4547
    15  1 AND 2 AND (12 OR
         13)_____                 847
    16  LA=FOREIGN_____           144563
    17  15 NOT 16_____            751
    18  16 NOT 15_____            144467
```

There is the option, with this command, of specifying the set number from which the history display will start. Thus, the command, HISTORY 10, will display sets 10 through the last created set.

CAUTION:

Those accessing DOE/RECON through Telenet should get in the habit of entering @b (CR), i.e. "at" sign followed by blank space followed by carriage return. This is because the @ symbol by itself is a Telenet command, which puts the user in direct communication with the Telenet program.

If you should inadvertently send the @ symbol and get connected to Telenet, simply type CONT for continue and you will be returned to DOE/RECON. The system will not prompt at this point.

An example of Telenet @ recovery is shown below.

```
ENTER:@
TELENET

@cont

ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  IT=RESIDENTIAL
          BUILDINGS_________      5228
```

2.8 VIEWING RESULTS

After performing a search, the results can be viewed online or printed offline in many different formats. The DISPLAY command is used to display results online while the PRINT command is used to request results offline.

2.8.1 FORMATS for DISPLAY and PRINT

FORMAT describes the various ways in which the citations in a set can be shown online with the DISPLAY command (Section 2.8.2) or printed offline with the PRINT command (Section 2.12). The format the searcher chooses will determine which data elements are displayed and the way in which they are arranged. There are 7 formats on DOE/RECON. All DOE data bases can be DISLPAYed or PRINTed in these formats. However non-DOE data bases may not be able to be viewed in all 7 formats, as the formats depend on the structure and content of the data base. DOE/RECON does not provide user-specified formats.

The following are examples of a citation in different formats. All data elements are labeled and each data element is displayed on a new line:

FORMAT 0 This formation includes the basic bibliographic information of citation number, title, authors and publication data, plus abstract and descriptors. This is the second most complete format, after FORMAT 6. To include abstracts in the output either FORMAT 0 or FORMAT 5 is recommended.

```
DIS 17/0/000001-000001//1          PAGE  1
<ACCESSION NO.> 80R0127367
<TITLE (MONO)> Rural Housing Research Unit (RHRU), Clemson,
  South Carolina:  Solar energy system performance evaluation,
  November 1979 through April 1980
<EDITOR OR COMP> Kennedy, M.
<CORPORATE AUTH> Automation Industries, Inc., Richland, WA (USA)
  . Vitro Engineering Div.
<CORPORATE CODE> 9500466
<PAGE NO> 77
<AVAILABILITY> NTIS, PC A05/MF A01.
<CONTRACT CODE> Solar Energy
<CONTRACT NO> Contract AC01-79CS30027
<DATE> 1980
<CO OF AUTH> US
<CO OF PUBL> US
<ANN J> ERA-06:002227;EDB-80:127367
<DISTRIBUTION> STD-59
<DOCUMENT ORIGIN> P
<BIS> TIC
<CATEGORIES> EDB-140901;140907
<PRIMARY CAT> EDB-140901
                                   -MORE-
```

```
DIS 17/6/000001-000001//1          PAGE  2
<REPORT NO> SOLAR/2086--80/14
<ABSTRACT> The Rural Housing Research Unit (RHRU) is a
  single-family residence in Clemson, South Carolina. The hybrid
  solar energy system is composed of a flat-plate collector and
  greenhouse, and is designed to augment the space heating and
  domestic hot water load while providing an environment for
  home food production. It is equipped with: a 388 square feet,
  site-built collector; 1161 ft$sup 3$, crushed rock storage,
  located under the building; electric residence heaters for
  space heating; and electric immersion heaters for domestic hot
  water.
<DESCRIPTORS> ATTACHED GREENHOUSES;FLAT PLATE COLLECTORS;HOUSES:
  T1;PASSIVE SOLAR HEATING SYSTEMS: T2;PERFORMANCE: Q2,Q3,Q4;
  ROCK BEDS;SENSIBLE HEAT STORAGE;SOLAR HEATING SYSTEMS: T3;
  SOLAR SPACE HEATING: Q1;SOLAR WATER HEATERS: T4;SOLAR WATER
  HEATING: Q1;SOUTH CAROLINA
```

FORMAT 1 Only citation numbers, or accession numbers, are displayed. The most recently entered number is listed first, and the other numbers are listed in order of increasing entry age, reading left to right.

```
ENTER:d 17/1/1-10
>PROCESSING<
DIS 17/1/000001-000010//          PAGE  1
  80R0127367    80X0127366    80R0122423
  80C0122418    80R0122411    80X0122408
  80J0116326    80R0116263    80R0110204
  80C0105654
```

FORMAT 2 This format includes citation number, title, authors, publication data and descriptors. No abstract is included. Only one citation is displayed on each page, although some citations cover more than one page. FORMAT 2 is the default format, and is given when no format is specified.

```
ENTER:d 17/2/1
>PROCESSING<
DIS 17/2/000001-000001//1          PAGE  1
<ACCESSION NO.> 80R0127367
<TITLE (MONO)> Rural Housing Research Unit (RHRU), Clemson,
  South Carolina:  Solar energy system performance evaluation,
  November 1979 through April 1980
<EDITOR OR COMP> Kennedy, M.
<CORPORATE AUTH> Automation Industries, Inc., Richland, WA (USA)
  . Vitro Engineering Div.
<PAGE NO> 77
<AVAILABILITY> NTIS, PC A05/MF A01.
<CONTRACT NO> Contract AC01-79CS30027
<DATE> 1980
<CATEGORIES> EDB-140901;140907
<PRIMARY CAT> EDB-140901
<REPORT NO> SOLAR/2086--80/14
<DESCRIPTORS> ATTACHED GREENHOUSES;FLAT PLATE COLLECTORS;HOUSES:
  T1;PASSIVE SOLAR HEATING SYSTEMS: T2;PERFORMANCE: Q2,Q3,Q4;
  ROCK BEDS;SENSIBLE HEAT STORAGE;SOLAR HEATING SYSTEMS: T3;
  SOLAR SPACE HEATING: Q1;SOLAR WATER HEATERS: T4;SOLAR WATER
  HEATING: Q1;SOUTH CAROLINA
```

FORMAT 3 Only the citation number, report number, and title are given in this format. Monograph title and conference title are included when individual papers are indexed separately. A page usually contains a variable number of entries, depending on the length of the titles. This format is useful for browsing search results or verifying titles.

```
ENTER:d 17/3/1-5
>PROCESSING<
DIS 17/3/000001-000005//1
<ACCESSION NO.> 80R0127367     *******1
<TITLE (MONO)> Rural Housing Research Unit (RHRU), Clemson,
  South Carolina:  Solar energy system performance evaluation,
  November 1979 through April 1980
<REPORT NO> SOLAR/2086--80/14

<ACCESSION NO.> 80X0127366     *******2
<TITLE (MONO)> Solar energy system performance evaluation,
  November 1979-April 1980:  Sir Galahad, Virginia Beach, VA
<REPORT NO> SOLAR/1028--80/14

<ACCESSION NO.> 80R0122423     *******3
<TITLE (MONO)> Solar energy system performance evaluation,
  design construction, Bigfork, Montana, October 1979-April 1980
<REPORT NO> SOLAR/1029--80/14

<ACCESSION NO.> 80C0122418     *******4
<REPORT NO,PAGE> PUB--355  PP. 59-81
<TITLE> Review of two stage, indirect, and regenerative
  evaporative cooling techniques
<TITLE (MONO)> Solar cooling applications workshop
                                    -MORE-
```

FORMAT 4 This format displays the basic bibliographic information of citation number, title, authors, and publication data. Several entries are displayed per page, depending on the length of each entry. This format is useful for obtaining a quick bibliography of a search.

```
ENTER:d 17/4/1-5
>PROCESSING<
DIS 17/4/000001-000005//1
<ACCESSION NO.> 80R0127367     *******1
<TITLE (MONO)> Rural Housing Research Unit (RHRU), Clemson,
  South Carolina:  Solar energy system performance evaluation,
  November 1979 through April 1980
<EDITOR OR COMP> Kennedy, M.
<CORPORATE AUTH> Automation Industries, Inc., Richland, WA (USA)
  . Vitro Engineering Div.
<AVAILABILITY> NTIS, PC A05/MF A01.
<CONTRACT NO> Contract AC01-79CS30027
<DATE> 1980
<REPORT NO> SOLAR/2086--80/14

<ACCESSION NO.> 80X0127366     *******2
<TITLE (MONO)> Solar energy system performance evaluation,
  November 1979-April 1980:  Sir Galahad, Virginia Beach, VA
<EDITOR OR COMP> Raymond, M.
<CORPORATE AUTH> Automation Industries, Inc., Silver Spring, MD
  (USA). Vitro Labs. Div.
<AVAILABILITY> NTIS, PC A05/MF A01.
<CONTRACT NO> Contract AC01-79CS30027
<DATE> 1980
                                        -MORE-
```

FORMAT 5 The citation number, title, authors, publication data, and abstract are displayed. Descriptors are not included. Like FORMAT 0, FORMAT 5 is recommended if abstracts are desired. FORMAT 5 may be called the "end user's format."

```
ENTER:d 17/5/1
>PROCESSING<
DIS 17/5/000001-000001//1          PAGE  1
<ACCESSION NO.> 80R0127367
<TITLE (MONO)> Rural Housing Research Unit (RHRU), Clemson,
  South Carolina:  Solar energy system performance evaluation,
  November 1979 through April 1980
<EDITOR OR COMP> Kennedy, M.
<CORPORATE AUTH> Automation Industries, Inc., Richland, WA (USA)
  . Vitro Engineering Div.
<PAGE NO> 77
<AVAILABILITY> NTIS, PC A05/MF A01.
<CONTRACT NO> Contract AC01-79CS30027
<DATE> 1980
<REPORT NO> SOLAR/2086--80/14
<ABSTRACT> The Rural Housing Research Unit (RHRU) is a
  single-family residence in Clemson, South Carolina. The hybrid
  solar energy system is composed of a flat-plate collector and
  greenhouse, and is designed to augment the space heating and
  domestic hot water load while providing an environment for
  home food production. It is equipped with: a 388 square feet,
  site-built collector; 1161 ft$sup 3$, crushed rock storage,
  located under the building; electric residence heaters for
  space heating; and electric immersion heaters for domestic hot
                                        -MORE-
DIS 17/5/000001-000001//1          PAGE  2
  water.
```

FORMAT 6 This format gives the complete record of a citation, including all the printable data elements. This format also includes some housekeeping information and computer-generated broader terms which are usually not of interest to the searcher.

```
ENTER:d 17/6/1
>PROCESSING<
DIS 17/6/000001-000001//1          PAGE  1
<ACCESSION NO.> 80R0127367
<TITLE (MONO)> Rural Housing Research Unit (RHRU), Clemson,
  South Carolina:  Solar energy system performance evaluation,
  November 1979 through April 1980
<EDITOR OR COMP> Kennedy, M.
<CORPORATE AUTH> Automation Industries, Inc., Richland, WA (USA)
  . Vitro Engineering Div.
<CORPORATE CODE> 9500466
<PAGE NO> 77
<AVAILABILITY> NTIS, PC A05/MF A01.
<CONTRACT CODE> Solar Energy
<CONTRACT NO> Contract AC01-79CS30027
<DATE> 1980
<CO OF AUTH> US
<CO OF PUBL> US
<ANN J> ERA-06:002227;EDB-80:127367
<DISTRIBUTION> STD-59
<DOCUMENT ORIGIN> P
<BIS> TIC
<CATEGORIES> EDB-140901;140907
<PRIMARY CAT> EDB-140901
                                        -MORE-
DIS 17/6/000001-000001//1          PAGE  2
<REPORT NO> SOLAR/2086--80/14
<ABSTRACT> The Rural Housing Research Unit (RHRU) is a
  single-family residence in Clemson, South Carolina. The hybrid
  solar energy system is composed of a flat-plate collector and
  greenhouse, and is designed to augment the space heating and
  domestic hot water load while providing an environment for
  home food production. It is equipped with: a 388 square feet,
  site-built collector; 1161 ft$sup 3$, crushed rock storage,
  located under the building; electric residence heaters for
  space heating; and electric immersion heaters for domestic hot
  water.
```

```
<DESCRIPTORS> ATTACHED GREENHOUSES;FLAT PLATE COLLECTORS;HOUSES:
  T1;PASSIVE SOLAR HEATING SYSTEMS: T2;PERFORMANCE: Q2,Q3,Q4;
  ROCK BEDS;SENSIBLE HEAT STORAGE;SOLAR HEATING SYSTEMS: T3;
  SOLAR SPACE HEATING: Q1;SOLAR WATER HEATERS: T4;SOLAR WATER
  HEATING: Q1;SOUTH CAROLINA
<DOCUMENT NO> 80:127367
<ISSUE> 24
<UPPOSTED DESC > APPLIANCES;BUILDINGS;ENERGY STORAGE;EQUIPMENT;
  GREENHOUSES;HEAT STORAGE;HEATERS;HEATING;HEATING SYSTEMS;NORTH
  AMERICA;RESIDENTIAL BUILDINGS;SOLAR COLLECTORS;SOLAR EQUIPMENT;
                                    -MORE-
DIS 17/6/000001-000001//1          PAGE  3
  SOLAR HEATING;SOLAR HEATING SYSTEMS;SOUTHEAST REGION;SPACE
  HEATING;STORAGE;USA;WATER HEATERS
```

2.8.2 DISPLAY online

DISPLAY is used to show search results online. Citations can be DISPLAYed in any of the 7 formats described in FORMATS (Section 2.8.1) with FORMAT 2 as the default format. In addition, the DISPLAY command can be used to show a previous EXPAND list, or related term display.

a. Direct DISPLAY

Syntax:	d citation number/format number %citation number/format number
Function:	DISPLAYs citations directly by citation number

A citation can be DISPLAYed directly from a data base by its citation number, i.e., the accession number assigned by the data base supplier, for example

```
d 80J0009174/0
```

Further, all of the following will result in the same display of the same citation in format 0:

```
d 80C1234/0
d 80C001234/0
d 80.1234/0
```

```
ENTER:d 80c1234/0
>PROCESSING<
DISPLAY 80C0001234/0                PAGE   1
<ACCESSION NO.> 80C0001234
<TITLE> Mineral exploration and development on public land
<AUTHORS> Babcock, R.C. Jr.
<AUTHOR AFF> Bear Creek Mining Co., Spokane, WA
   .
   .
   .
   .

ENTER:d 80c001234/0
>PROCESSING<
DISPLAY 80C0001234/0                PAGE   1
<ACCESSION NO.> 80C0001234
<TITLE> Mineral exploration and development on public land
<AUTHORS> Babcock, R.C. Jr.
<AUTHOR AFF> Bear Creek Mining Co., Spokane, WA
   .
   .
   .
   .

ENTER:d 80.1234/0
>PROCESSING<
DISPLAY 80C0001234/0                PAGE   1
<ACCESSION NO.> 80C0001234
<TITLE> Mineral exploration and development on public land
<AUTHORS> Babcock, R.C. Jr.
<AUTHOR AFF> Bear Creek Mining Co., Spokane, WA
   .
   .
   .
   .
```

The third character in the citation number represents the type of document code and is not actually checked by DOE/RECON. However, a type of document code, e.g., j (for journal), or any non-numeric character such as a ? (question mark), a . (period), or a b (space) must be used in its place for the correct citation to be DISPLAYed. The zeroes immediately after the type of document code can also be ignored.

The first line of the DISPLAY above indicates the citation number requested (80C0001234) and the display format chosen (0), and gives the page number being displayed for that citation (PAGE 1). If the citation is longer than one page, i.e., if the word -MORE- appears in the lower right corner of the display, the next page can be DISPLAYed by using the PAGE command (0) as described in Section 2.8.3.

b. DISPLAY by set number

Syntax:	d set number/format number/citation number range %set number/format number/citation number range
Function:	DISPLAYs citation(s) from a set already developed

Citations from a set can be DISPLAYed in the formats described in Section 2.8.1. The most recently entered citations are DISPLAYed first, followed by citations of increasing entry age. For example,

```
d 1
 or
d 1/2
```

will result in the same display of the first citation in set 1 in FORMAT 2 which is the default format. However,

```
d 1/3
 or
d 1/4
```

will DISPLAY several citations (on one "page") and they will be consecutively numbered.

```
ENTER:d 1/3
>PROCESSING<
DIS  1/3/000001-001701//1
<ACCESSION NO.> 81C0024838    *******1
<TITLE> Laser interactions with plasmas
<TITLE (MONO)> IEEE 1974 Region Six (western USA) conference on
  optoelectronics and laser technology

<ACCESSION NO.> 81J0024835    *******2
<TITLE> Higher-harmonic generation in an inhomogeneous plasma

<ACCESSION NO.> 81R0024805    *******3
<TITLE (MONO)> The 24 inch cusp experiment.   Final report
<REPORT NO> AD-A--083390

<ACCESSION NO.> 81C0024784    *******4
<TITLE> Carbon dioxide laser interaction with magnetized plasmas
<TITLE (MONO)> IEEE 1974 Region Six (western USA) conference on
  optoelectronics and laser technology

<ACCESSION NO.> 81X0024769    *******5
<TITLE (MONO)> Dense plasma heating and radiation generation.
  Annual report No. 4, 1 November 1977-31 October 1978
<REPORT NO> AD-A--082432
```

The first line of data shown indicates: the information is displayed as a result of a DISPLAY command (DIS); the set number (3); the display format chosen (3); the citation number range (000001-001701); the citation being displayed (1), and the page being displayed for that citation.

DOE/RECON has a continuous display capability for hard copy terminals. Continuous display will print the first 20 citations in the DISPLAYed set in one burst. If the set contains more than 20, then the PAGE command will give the next 20 in one burst, (e.g., d 2/5/1-54 will DISPLAY the first 20 citations and P will DISPLAY the next 20, etc.)

The searcher can also show a specific citation or a range of citations within a set. To display the fifth citation in set 2 in format 5, enter:

d 2/5/5

To display the tenth to thirtieth citation in set 3 in format 2, enter:

d 3/2/10-30
or
d 3//10-30

The // indicates that the default format is requested.

c. DISPLAY next citation

Syntax:	d %
Function:	DISPLAYs next citation in current set

After the searcher has DISPLAYed the first citation from a set, the next citation can be shown using D, e.g.,

D 4 (to DISPLAY first citation in set 4)
D (to DISPLAY succeeding citations)

There is no need to mention the set number again when more consecutive citations from the same set are being displayed.

NOTE:

Note the difference between the PAGE (P) command and this use of the DISPLAY (D) command. D DISPLAYs the next citation, even if there are several more pages to the citation currently being shown. P DISPLAYs the next page in the current set, which can be the subsequent pages of the same citation or the next citation. (See PAGE command, Section 2.8.3 for other uses of P).

2.8.3 PAGE

Syntax:	p m 0 0-	 [zero] [zero minus]
Function:	. The PAGE command (0) shows the next page of any display that indicates -MORE- . The PAGE back command (0-) redisplays the preceding page within an EXPAND display	

A PAGE on DOE/RECON contains a maximum of 22 lines. The PAGE command is used to show the next page of any display that indicates -MORE- on the lower right corner of the page being displayed. Entering P will display the next page.

The PAGE command can be used to display additional pages in the following contexts:

- In an EXPAND command to display up to a maximum of 40 "E" reference numbers.
- In a direct or indirect EXPAND related terms command to display up to a maximum of 999 "R" reference numbers.
- In a DISPLAY command to display further citations within a set, or the continuation of a citation.
- In a SET HISTORY command to display up to a maximum of 99 sets.

The PAGE back (0-) command may be used to redisplay the preceding page, with certain exceptions. When DISPLAYing, 0- cannot be used within a multi-page citation or to redisplay the preceding citation. [See DISPLAY command for the use of %-, %fp, Section 2.8.4d, 2.8.4e]

See also the use of ?+ and ?- under the HELP command, Section 2.2.

2.8.4 Redisplay commands (for CRT terminals)

There are several redisplay commands on DOE/RECON which show previously displayed pages. These commands are more useful with cathode-ray-tube (CRT) terminals than with printing terminals.

a. DISPLAY preceding citation

Syntax:	d- %-
Function:	Redisplays preceding citation in current set

This command can only be used with formats having one citation on one or more pages; i.e, formats 0, 2, 5, 6.

b. DISPLAY first page

Syntax:	d fp %fp
Function:	Redisplays the first page of a multi-paged citation

c. DISPLAY first abstract

Syntax:	d fa %fa
Function:	Redisplays the first citation, or first page of citations, in the current set

d. Redisplay last EXPAND

Syntax:	d e %e
Function:	Redisplays the index page from the last EXPAND command

e. Redisplay last related term EXPAND

Syntax:	d r %r
Function:	Redisplays the index page resulting from the last related term EXPAND command

2.9 NARROWING THE OUTPUT

There are several ways to narrow or reduce the size of the search output. These include two different chronological approaches and several document-type approaches. The LIMIT command works on the accession number of the citation. This number consists of a volume, which corresponds with a year on some data bases, a document type, and an accession number. Other approaches involve prefixed fields which may be used in some data bases to restrict search output.

2.9.1 LIMIT

Syntax: L set number/vol range[/doc type][/accession number range]
)set number/vol range[/doc type][/accession number range]

L all/vol range
L no
)all/all/all/all

Function: Reduces a set to a specified accession range

The LIMIT command works on the citation numbers within a set by comparing the volume number, document-type codes, or accession numbers to values that the user specifies. The parameters must be entered from left to right. Those enclosed in square brackets may be omitted. The various features of the LIMIT command, as explained in the following sections, may be used together in any one LIMIT command.

2.9.2 LIMIT by volume number of database

```
1   s carbon dioxide lasers

2   L 1/79-80
```

LIMIT can require that a set contain certain volume and accession number ranges, e.g. that documents in the set have been entered in recent volumes of the data base.

In some data bases, however, retrospective material published a number of years ago may be included in the most recent volumes of the data base. In this case, a publication year may be a better approach, as shown in Section 2.9.3.

Use of the word ALL for set, volume range, type, and/or numeric will include all the sets you produce from that point on, all the volumes in the file, all the types of documents, or all the citations in the file within the limits set by the other parts of that specific LIMIT command. Thus,

L all/78-80

will limit all succeeding sets to volume 78-80.

To cancel a LIMIT ALL command, use either

L no

which will result in

NOW VALID LIM NO

or

L all/all/all/all

which will result in

NOW VALID LIM ALL/ALL/ALL/ALL

2.9.3 SELECT year of publication

Syntax:	s yr=nnnn
Function:	Retrieves a set by year of publication, to be COMBINEd with subject set.

To aid in retrieving citations published in a given year (as opposed to citations entered in the data base in that year), several DOE/RECON data bases can be searched by year of publication.

To use the previous example, in EDB you could retrieve citations published in 1979 and 1980 from set 1.

3 s YR=1979

4 s YR=1980

5 c 1 and 3 or 1 and 4

Note that this gives a different result from that of the LIMIT command shown previously (see Section 2.9.2). Examples follow:

```
ENTER:s carbon dioxide lasers
>PROCESSING<
   1   1701 IT=CARBON DIOXIDE LASERS
ENTER:1 1/79-80
>PROCESSING<
   2    714 LIM 1/79-80
```

LIMIT BY VOLUME OF DATA BASE (2.9.2.)
NOTE: IT IS LIKELY THAT SOME DOCUMENTS PUBLISHED LATE IN 1978 WERE ENTERED IN VOLUME 79.

```
ENTER:s yr=1979;s yr=1980
>PROCESSING<
   3  99033 YR=1979
   4  41724 YR=1980
ENTER:c1 and 3 or 1 and 4
>PROCESSING<
   5    462 1 AND 3 OR 1 AND 4
```

SELECT YEAR OF PUBLICATION (2.9.3.)
NOTE: FEWER DOCUMENTS WERE RETRIEVED THAN ABOVE.

2.9.4 LIMIT by type of article

Syntax: L set number/all/doc type
or
)set number//doc type

Function: Restricts a set to a specified document type.

The LIMIT command may also be used to specify a particular type of article by using the one-character code between the volume number and accession number. This depends on the data base; for example, EDB has a set of document type codes (shown in the EDB manual chapter and in the online HELP file under ?DTYPE). A typical accession number for a report would be 80R6323. The R signifies that the document is a report and it may be specified in the LIMIT command.

In EDB, to LIMIT an output to reports, one would enter:

```
6   L 5/all/R,U,X
```

(R is for reports; U is for report analytics; and X is for progress reports.)

To find books on renewable energy sources:

```
7   s renewable energy sources

8   L 7//B
```

```
ENTER:1 5/all/r,x,u
>PROCESSING<
   6      48 LIM 5/ALL/R,X,U
ENTER:s renewable energy sources
>PROCESSING<
   7   16724 IT=RENEWABLE ENERGY SOURCES
ENTER:1 7//b
>PROCESSING<
   8    1201 LIM 7//B
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  IT=CARBON DIOXIDE
          LASERS_____________      1701
     2  LIM 1/79-80________       714
     3  YR=1979____________     99033
     4  YR=1980____________     41724
     5  1 AND 3 OR 1 AND 4_       462
     6  LIM 5/ALL/R,X,U____        48
     7  IT=RENEWABLE ENERGY
          SOURCES___________     16724
     8  LIM 7//B___________      1201
```

2.9.5 LIMIT to update a previous search

The LIMIT command, in addition to providing volume number access (discussed in Section 2.9.2) and document-type access (discussed in Section 2.9.4), may also be used to specify a particular accession number range.

This would be useful if a search had already been run and only the citations added since the previous search are desired. For example, if the previous search ended in volume 81, citation #2871, the LIMIT command would look like this:

1	s electric batteries	
2	s design	
3	s fabrication	
4	c 1 and (2 or 3)	
5	L 4/81/all/2872-999999	(The word ALL indicates that all document types are requested)

If the search had previously been done in volume 80 with most recent citation #2871, two LIMIT commands would be required.

6	L 4/80//2872-999999	(The double slashes // represent the default for ALL document types)
7	L 4/81	
8	c 6 or 7	

See also Section 2.9.3, SELECT year of publication.

```
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  IT=ELECTRIC
         BATTERIES_____________    8500
     2  IT=DESIGN_____________   51861
     3  IT=FABRICATION________   19368
     4  1 AND (2 OR 3)________    2968
     5  LIM 4/81/ALL/2872-9
        99999_________________      36
     6  LIM 4/80/ALL/2872-9
        99999_________________     283
     7  LIM 4/81______________      77
     8  6 OR 7________________     360
```

CAUTION:

This application of the LIMIT command is geared to the Energy Data Base (EDB). Some data bases do not have meaningful volume numbers. The HELP command ?EDU indicates the accession number range of each EDB update.

Further, do not enter

L 4/80-81/all/2872-999999;

the accession number LIMIT will be applied to each volume, thus missing the first 2871 citations of volume 81.

2.10 TAILORING SETS WITH THE KEEP COMMAND (Storing Selected Citations)

Syntax:	k k set no/citation number k volume number document type accession number (vv.nnnnn
Function:	Stores specified citations in set 99

The KEEP command may be used to sift through output results and collect desired items in set 99 which is reserved for this purpose. This command was designed for users of CRT terminals, but it may be used on hard-copy terminals if desired.

A single citation currently on DISPLAY can be saved with the KEEP command, if it is in format 0, 2, 5, or 6 (e.g. to KEEP a citation currently on display in format 0, 2, 5 or 6, input KEEP).

```
d 10
k
```

The KEEP command may use a set number and a range of citations, as shown below; it will not handle non-consecutive citation numbers.

```
k 10/4-5
k 10/8-9
(10/12
```

Individual citations may be put into set 99 by accession number.

```
k 80j127060
```

```
ENTER:k 80.127060
>PROCESSING<
99          1 KEEP DATA SET
```

Once a set 99 has been generated, it may be DISPLAYed, COMBINEd, or PRINTed as any other set.

2.11 SEARCHING FOR VERY SPECIFIC SUBJECTS

2.11.1 LOOK command

Syntax:	look setnumber/A,T/'text'
	lk setnumber/A,T/'expression one'+'expression two' (a space indicates that a phrase is to be retrieved)
	look setnumber/A/'term1'*'term2' (using Boolean logic)
	lk setnumber/T/'term1:term2' (specifying order)
Function:	Finds specific terms or phrases within a subset of the data base.

The LOOK command provides access to unindexed fields such as abstract, title, and title augmentation. The exact fields upon which the LOOK command operates are given in the preface material for each data base (accessible through ?file name, e.g. ?RIP).

The LOOK command can only operate on a subset of the data base being searched; therefore, the user must first create a set upon which the LOOK command can operate. The LOOK command will operate on the set in units of 200 documents per execution. For example, to LOOK (for a desired term or phrase) in a set of 1000 documents will require the LOOK command to be repeated 5 times. Then, to keep the repetitions of the LOOK command to a minimum, and hence, increase search efficiency, the smallest set in which one would expect to find the desired term(s) (by LOOKing) should first be created.

In the syntax examples given above, the first shows a simple search for a single word in the abstract or title field of an already-retrieved set. The word in this example, 'text', is enclosed by the single quote marks.

The LOOK command searches for any occurrence of the specified string; it is in effect an unlimited and unqualified truncation, and would, in the above example, pick up "context" or "textual." To avoid picking up occurrences within another word, one may use a space before and after the string, e.g. ' text '. However, this spacing may cause a relevant citation to be missed if the ' text ' occurred as the first word of a title (therefore, had no space before it) or is followed by punctuation (therefore, had no space after it).

The second example shows that a phrase may be enclosed in single quotes, and that more than one phrase may be specified. The Boolean operator OR must be entered as the + sign.

The third example shows the use of Boolean AND logic, represented by the *. Here again, truncated terms are used.

In the last example, the colon specifies that "term1" must appear somewhere before "term2." However, anything may appear between them.

After the LOOK command is executed, the computer will respond with a message:

```
LOOK:  200 RCDS SRCHD,     0 HITS--CONT?
?LO9   TEXT SEARCH COMMAND INSTRUCTIONS

     You may either stop or continue the
linear search.  If you continue, 200 more
documents will be searched for the text
you have specified.  If you stop, a set
consisting of the documents already sel-
ected will be created and added to your
set history.
     You may enter any RECON command at
this point, but anything except YES will
terminate the text search.

ENTER: yes    to continue the search.

ENTER: no     to terminate the search.
```

Any reply except YES will terminate the LOOK command and a new set which contains all "hits" will be created. Normally, the LOOK will be continued by the user responding YES until all documents are searched; at this point the new set of all "hits" will be created.

The LOOK command is used primarily in the following situations:

- When the search request is more specific than the indexing language
- When an index term has recently been added to the thesaurus and earlier instances of the concept are sought
- When the words are required in a particular sequence (e.g. METALLIC HYDROGEN in a title instead of TL=METALLIC and TL=HYDROGEN)
- When a title is sought via a stopword

To use the LOOK command, proceed as follows;

1. Determine the context:

   - Create the smallest set that should contain the concept; aim for sets of a few hundred citations rather than a few thousand

   - Consider categories as well as index terms to establish the set to be LOOKed

2. Retrieve what you can directly, e.g. SELECT the new index term

3. Perform the LOOK command

4. COMBINE results with whatever you have retrieved in Step 2

Example of the LOOK command (search request more specific than indexing language).

Problem: Find articles on the use of atriums in passive solar heating and cooling systems.

```
ENTER:s passive solar heating systems
>PROCESSING<
   1    1231 IT=PASSIVE SOLAR HEATING SYS
ENTER:s passive solar cooling systems
>PROCESSING<
   2     315 IT=PASSIVE SOLAR COOLING SYS
ENTER:c 1 or 2
>PROCESSING<
   3    1266 1 OR 2
ENTER:loo3/a,t/'atrium';yes;yes;yes;yes
>PROCESSING<
LOOK:   200 RCDS SRCHD,      3 HITS--CONT?
?LO9   TEXT SEARCH COMMAND INSTRUCTIONS

     You may either stop or continue the
linear search.  If you continue, 200 more
documents will be searched for the text
you have specified.  If you stop, a set
consisting of the documents already sel-
ected will be created and added to your
set history.
     You may enter any RECON command at
this point, but anything except YES will
terminate the text search.

ENTER: yes    to continue the search.

ENTER: no     to terminate the search.
```

```
LOOK:   400 RCDS SRCHD,      4 HITS--CONT?
LOOK:   600 RCDS SRCHD,      8 HITS--CONT?
LOOK:   800 RCDS SRCHD,      9 HITS--CONT?
LOOK:  1000 RCDS SRCHD,     10 HITS--CONT?
ENTER:yes;yes
>PROCESSING<
LOOK:  1200 RCDS SRCHD,     11 HITS--CONT?
   4      13 3/A,T/'ATRIUM'
ENTER:d 4/0/2
>PROCESSING<
DIS  4/0/000002-000002//2          PAGE  1
<ACCESSION NO.> 80X0100822
<TITLE (MONO)> Solar atrium:  a hybrid solar heating and
  cooling system.  Technical progress report No. 10, 19
  December 1979-19 March 1980
<EDITOR OR COMP> Ueland, M.
<CORPORATE AUTH> Ueland and Junker, Architects and
  Planners, Philadelphia, PA (USA)
<PAGE NO> 7
<AVAILABILITY> NTIS, PC A02/MF A01.
<CONTRACT NO> Contract FG02-77CS34135
<DATE> 19 Jun 1980
<CATEGORIES> EDB-140901
<PRIMARY CAT> EDB-140901
<REPORT NO> DOE/EG/34135--10
<ABSTRACT> A program of applied research has been developed
  for the design, construction and monitoring of an
  innovative concept of solar heating and cooling called
  solar atrium. The solar atrium concept is adaptable to
  residences and smaller commercial and institutional
  buildings. It is designed to be constructed of materials
  and equipment that are economical and readily available.
                                        -MORE-
```

Example of the LOOK command (new index term has recently been added; earlier instances of the concept are sought).

Problem: Find articles on away from reactor storage, sometimes called AFR.

```
ENTER:s tl=afr                    RETRIEVE WHAT YOU CAN DIRECTLY
>PROCESSING<
   1      22 TL=AFR
```

```
ENTER:d 1
>PROCESSING<
DIS  1/2/000001-000022//1          PAGE  1
<ACCESSION NO.> 81R0015543
<TITLE (MONO)> Monthly away-from-reactor spent fuel storage
  report:  AFR program, November 1-30, 1980
<CORPORATE AUTH> Department of Energy, Aiken, SC (USA).
  Savannah River Operations Office
<PAGE NO> 124
<AVAILABILITY> NTIS, PC A06/MF A01.          DISPLAY RESULTS.  FIND
<DATE> 1980                                  NEW TERM
<CATEGORIES> EDB-050900
<PRIMARY CAT> EDB-050900
<REPORT NO> DOE/SR-SF--2005-11
<DESCRIPTORS> AWAY-FROM-REACTOR STORAGE: T1;BARNWELL FUEL
  PROCESSING PLANT;INSTITUTIONAL FACTORS;LICENSING;
  MANAGEMENT;MIDWEST FUEL RECOVERY PLANT;RESEARCH PROGRAMS:
  Q1;SAFEGUARDS;STORAGE FACILITIES;TRANSPORT
ENTER:s away-from-reactor storage
>PROCESSING<
   2      63 IT=AWAY-FROM-REACTOR STORAGE
ENTER:c 1 or 2
>PROCESSING<
   3      68 1 OR 2
ENTER:s spent fuel storage
>PROCESSING<
   4    1001 IT=SPENT FUEL STORAGE
ENTER:lo 4/a,t/'afr'+'away:from:reactor'    SELECT SET FOR LOOK
>PROCESSING<
LOOK:   200 RCDS SRCHD,     21 HITS--CONT?
?LO9   TEXT SEARCH COMMAND INSTRUCTIONS

     You may either stop or continue the
linear search.  If you continue, 200 more
documents will be searched for the text
you have specified.  If you stop, a set
consisting of the documents already sel-
ected will be created and added to your
set history.
     You may enter any RECON command at
this point, but anything except YES will
terminate the text search.

ENTER: yes    to continue the search.

ENTER: no     to terminate the search.
```

```
ENTER:0;0;0;0;0
>PROCESSING<
LOOK:   400 RCDS SRCHD,     39 HITS--CONT?  NOTE THAT ZEROS ALSO WORK FOR
LOOK:   600 RCDS SRCHD,     58 HITS--CONT?  THE LOOK COMMAND AND THAT THE
LOOK:   800 RCDS SRCHD,     73 HITS--CONT?  5th YES CAUSED CITATIONS
LOOK:  1000 RCDS SRCHD,     74 HITS--CONT?  1000-1001 TO BE SEARCHED AND
   5     74 4/A,T/'AFR'+'AWAY:FROM:REACT    CREATED SET 5
ENTER:c 3 or 5
>PROCESSING<
   6     98 3 OR 5
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  TL=AFR_____________         22
     2  IT=AWAY-FROM-REACTO
        R STORAGE__________         63
     3  1 OR 2_____________         68
     4  IT=SPENT FUEL
         STORAGE___________       1001      COMBINE THE DIRECT RETRIEVAL
     5  4/A,T/'AFR'+'AWAY:F                WITH LOOK RESULT
        ROM:REACTOR'_______         74
     6  3 OR 5_____________        98
```

```
DISPLAY 80C0064890/0              PAGE   1
<ACCESSION NO.> 80C0064890
<TITLE> Spent fuel disposition--the situation in the United
  States
<AUTHORS> Hanson, A.S.
<AUTHOR AFF> Yankee At Electr Co, Westboro, Mass
<PUB DESC> Energy Technol. (Wash., D.C.), v. 6, pp. 857-861
<DATE> 1979
<CATEGORIES> EDB-050900
<PRIMARY CAT> EDB-050900
<ABSTRACT> Because neither reprocessing nor spent fuel
  disposal can be expected in significant quantities during
  the 1980's, the only alternative near-term disposition of
  spent fuel in the US will be interim storage. New
  at-reactor storage techniques and away-from-reactor
  storage facilities will be needed to provide the required
  storage capacity. In the long term spent fuel
  reprocessing and waste disposal must be done if nuclear
  power is to remain an important energy source for the US.
<DESCRIPTORS> RADIOACTIVE WASTE DISPOSAL;SPENT FUEL
  STORAGE: T,Q1;USA: T1
```

Example of the LOOK command (Title words desired in a particular sequence).

Problem: Find articles with "metallic hydrogen" in the title.

```
ENTER:s tl=metallic;s tl=hydrogen
>PROCESSING<
   1    932 TL=METALLIC
   2  12123 TL=HYDROGEN
ENTER:c 1 and 2
>PROCESSING<
   3     61 1 AND 2
ENTER:lo 3/t/'metallic hydrogen';yes;yes;yes;yes
>PROCESSING<
   4     25 3/T/'METALLIC HYDROGEN'
ENTER:c 3 not 4
>PROCESSING<
   5     36 3 NOT 4
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR              CIT
     1  TL=METALLIC_________     932
     2  TL=HYDROGEN_________   12123
     3  1 AND 2_____________      61
     4  3/T/'METALLIC
         HYDROGEN'_________       25
     5  3 NOT 4_____________      36
ENTER:d 4/3
>PROCESSING<                          RESULT OF LOOK COMMAND:
DIS  4/3/000001-000027//1             CORRECT RELATION OF TITLE WORDS
<ACCESSION NO.> 80J0099566    *******1
<TITLE> Non-linear self-consistent screening applied to metallic
  hydrogen

ENTER:d 5/3
>PROCESSING<                          RESULT OF COMBINE OF TITLE WORDS:
DIS  5/3/000001-000035//1             INCORRECT RELATION
<ACCESSION NO.> 81C0017128    *******1
<TITLE> Corrosion of metallic materials in high temperature and
  concentrated sulphuric acid
<TITLE (MONO)> Hydrogen as an energy vector
```

Example of the LOOK command (Title desired contains stopword needed for retrieval).

Problem: Find a report on high temperature ceramics (high is a stopword).

```
ENTER:s tl=ceramics
>PROCESSING<
   1     638 TL=CERAMICS
ENTER:s tl=high
>PROCESSING<
  TL=HIGH                    NOT FOUND     "HIGH" IS A STOPWORD
ENTER:lo 1/t/'high temperature' ;yes;yes;yes
>PROCESSING<
LOOK:   200 RCDS SRCHD,     10 HITS--CONT?
?LO9   TEXT SEARCH COMMAND INSTRUCTIONS

     You may either stop or continue the
linear search.  If you continue,  200 more
documents will be searched for the text
you have specified.  If you stop, a set
consisting of the documents already sel-
ected will be created and added to your
set history.
     You may enter any RECON command at
this point, but anything except YES will
terminate the text search.

ENTER: yes    to continue the search.

ENTER: no     to terminate the search.




                                  *     ?-
LOOK:   400 RCDS SRCHD,     14 HITS--CONT?
LOOK:   600 RCDS SRCHD,     24 HITS--CONT?
   2      27 1/T/'HIGH TEMPERATURE'
ENTER:d 2/3
>PROCESSING<
DIS  2/3/000001-000027//1
<ACCESSION NO.> 81C0005052     *******1
<REPORT NO,PAGE> CONF-801079  PP. VI.21-VI.32
<TITLE> High temperature applications of structural ceramics
<TITLE (MONO)> Materials for coal conversion and utilization
<REPORT NO> CONF-801079--
```

2.12 PRINTING OFFLINE

The PRINT command is used to request offline printing of search results. Printouts can be requested in 3 ways:

- From ORNL - Most printouts are produced at the ORNL Computer Center overnight and then mailed to the address of the password holder.

- Via SACNET - If a searcher has access to the Secure Automatic Communications Network (SACNET), search results can be transmitted from ORNL to the searcher's site or a close-by site via SACNET.

- Via RJE - Search results can be transmitted from ORNL via Remote Job Entry (RJE). This means that the searcher should have access to a computer compatible with an IBM Hasp Work Station, i.e. IBM Model 20 or 2780. Only a few RJE stations are available. DOE/RECON searchers who are interested in this mode of transmitting search results should contact the DOE/RECON Manager (see Section 1.2.5).

DOE/RECON printouts are mailed to the person responsible for the DOE/RECON ID. This mailing address is stored separately in the user ID authority file and is activated every time a PRINT command is requested; the address one enters on the Search Identification Page is for printout identification only.

It is important for searchers to keep their DOE/RECON mailing address up-to-date. This will ensure better delivery of prints, manual updates, newsletters and other DOE/RECON correspondence. To make changes in a DOE/RECON mailing address, contact DOE/RECON Operations (see Section 1.2.5).

For information on cost of offline prints, see Appendix A: Cost.

2.12.1 PRINT formats

The PRINT formats are the same as the DISPLAY formats discussed in Section 2.8.1. The default format is FORMAT 2.

To print only the basic bibliographic information, FORMAT 4 is recommended. To include abstracts in the output, either FORMAT 6, FORMAT 5, or FORMAT 0 should be requested.

2.12.2 PRINT command

Syntax:	pr set number/format number/citation range &set number/format number/citation range
Function:	. Produces offline printout of search results
	. PRINTs default of up to 200 citations
	. PRINTs up to 2000 citations if citation range is indicated

To avoid PRINTing large sets by accident, DOE/RECON has a default limit of 200 citations which is invoked if the searcher does not specify a citation range. For example

pr 1/0

will result in PRINTing all citations in set 1, if 200 or fewer, in FORMAT 0. DOE/RECON will respond as follows:

PRINT 01/0/000001-00000120

This indicates that citations 1-120 in set 1 have been PRINTed in FORMAT 0.

Individual citations or portions of a set can be requested, e.g.,

pr1//45
or
&1//50-120

The double slashes (//) indicate that the default format is desired. Here the 45th and 50th to 120th citations are requested.

Up to 2000 citations may be entered in one PRINT statement by including the desired citation range. For example,

pr 3/5/1-1678

will result in the system's response

PRINT 03/5/000001-001678

that citations 1-1678 in set 3 have been PRINTed in format 5.

Searchers should avoid very large printouts unless they are certain that the prints are appropriate. However, if more than 2000 citations are needed, a second PRINT command must be entered. For example

pr 4/4/1-2000
&4/4/2001-2345

Whenever a PRINT command has been requested, an asterisk * will appear in front of the set number in the SET HISTORY. For example,

```
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  IT=CARBON DIOXIDE
          LASERS_____________      1701
     2  LIM 1/79-80_________       714
     3  YR=1979_____________     99033
     4  YR=1980_____________     41724
 *   5  1 AND 3 OR 1 AND 4_        462
```

DIAGNOSTICS:

Infrequently, a printout may fail to arrive or may arrive out of sequence. These prints may sometimes be regenerated at ORNL. If this is not possible, the search must be rerun. For problems about prints, contact DOE/RECON Operations (see Section 1.2.5). When the DOE/RECON computer goes down, previous PRINT requests are normally saved.

2.12.3 DELETE prints

```
Syntax:    del/set number

           de/set number

Function:  DELETES a request for prints from a set
```

The DELETE prints command is very useful when a searcher has accidentally requested offline prints from the wrong set. To DELETE prints from set 2, enter

```
del/2
```

This will DELETE the request for prints from set 2 requested earlier in the same search session. DOE/RECON will respond with:

```
DELETED 2
```

NPT will appear in front of the set number when the SET HISTORY is displayed, e.g.,

```
ENTER:del/5
>PROCESSING<
PRINTS DELETED FOR SET 05
ENTER:ds
>PROCESSING<
   SET HISTORY (*=PRINTS, NPT=NO PRINTS)
   SET  DESCRIPTOR                CIT
     1  IT=CARBON DIOXIDE
          LASERS_____________      1701
     2  LIM 1/79-80_________      714
     3  YR=1979_____________     99033
     4  YR=1980_____________     41724
NPT  5  1 AND 3 OR 1 AND 4_       462
```

Once a DELETE prints command has been used on a set, no more prints can be requested from the same set. If more prints are needed later from that set, the searcher can SELECT or COMBINE the set again and PRINT from the new set, e.g.,

c 2 and 2; pr 3

CAUTION:

Prints must be DELETEd within the same search session. Once an END or BEGIN command has been issued, the previous search sets, and therefore the DELETE capability, are not available.

2.13 ENDING THE SEARCH SESSION

Syntax:	= end
Function:	Ends search session
Syntax:	=stop
Function:	Logs off

To END a search session, the user may enter a "=" sign or END. This will give an elapsed-time figure since the last BEGIN. (A new BEGIN will also END the previous session, e.g. B5.)

To disconnect from the ORNL computer, the user must type =STOP and then hang up the telephone. The ORNL computer invites a new logon after =STOP, but this may be ignored. Both the END and ENDSTOP commands cancel all previous search transactions (except offline print requests).

NOTE:

To signify ENDSTOP, the equal sign must be used.

APPENDIX A: COSTS

Effective October 1, 1980, charges for DOE/RECON are:

		With 31% Overhead
Search time/per hour	$15.27	$20.00
Local print/per page	0.153	0.20
SACNET print/per page	0.053	0.07
RJE print/per page	0.053	0.07

The 31% overhead represents overhead charges at the Oak Ridge National Laboratory where the DOE/RECON system is operated.

In addition, Telenet charges, if applicable, will be invoiced but will not receive the overhead charge. Telenet bills are on a different billing cycle.

Invoices for DOE/RECON usage will be billed on a quarterly basis by the Union Carbide's Accounting Division. High-usage accounts are billed monthly.

APPENDIX B: TELENT ACCESS

* NEW TELENET CENTRAL OFFICE

+ NEW 1200 BAUD ACCESS AVAILABLE

& NEW TELENET CENTRAL OFFICE ADDED CURRENT MONTH

$ NEW 1200 BAUD ACCESS AVAILABLE ADDED CURRENT MONTH

GTE/Telenet provides local network access in these U. S. cities of 50,000 population or more. In-WATS access is available in other locations. 1200 bps access numbers require the use of Bell 212- or Vadic 3405-compatible modems, as noted. (B) = Bell 212, (V) = VADIC 3405, (B/V) = either Bell 212 or Vadic 3405.

[ ] indicates the actual location of Telenet facilities. In some cases, local access may require extended metro telephone service or involve message unit charges.

TELENET CUSTOMER SERVICE: 800/336-0437
(IN VIRGINIA: 800/572-0408)

CITY	110-300 BPS	TCO	1200 BPS
AL 205 BESSEMER	251-2495	[BIRMINGHAM]	(B/V) 326-3420
AL 205 BIRMINGHAM	251-2495		(B/V) 326-3420
AL*205 FLORENCE	767-4800		
AL*205 HUNTSVILLE	539-2280		(B/V) 539-2280
AL*205 MOBILE	432-8015		(B/V) 432-1680
AL*205 SHEFFIELD	767-4800	[FLORENCE]	
AK 907 ANCHORAGE	276-0271		(B/V) 276-0271
AK 907 JUNEAU	586-9700		(B/V) 586-9700
AR*501 LITTLE ROCK	374-4100		(B/V) 372-4616
AZ 602 MESA	257-1552	[PHOENIX]	(B/V) 271-0533
AZ 602 PHOENIX	257-1552		(B/V) 271-0533
AZ 602 SCOTTSDALE	257-1552	[PHOENIX]	(B/V) 271-0533
AZ 602 TEMPE	257-1552	[PHOENIX]	(B/V) 271-0533
AZ 602 TUCSON	790-0427		(B/V) 745-1666
CA 213 ALHAMBRA	956-8235	[GLENDALE]	(B/V) 246-0318

CA+714 ANAHEIM	558-6061	[SANTA ANA]	(B/V) 558-7078
CA&805 BAKERSFIELD	327-8146		(B/V) 327-8146
CA 415 BURLINGAME	595-0360	[SAN CARLOS]	(B/V) 591-0726
CA+213 CANOGA PARK	822-9287	[MARINA DEL REY]	(B/V) 306-2984
CA 714 COLTON	824-1710		(B/V) 824-3805
CA+408 CUPERTINO	279-8450	[SAN JOSE]	(B/V) 279-2425
CA*714 ES CONDIDO	747-0810		
CA 213 EL MONTE	956-8235	[GLENDALE]	(B/V) 246-0318
CA*213 EL SEGUNDO	322-7703		
CA+714 FULLERTON	558-6061	[SANTA ANA]	(B/V) 558-7078
CA+714 GARDEN GROVE	891-5711		(B/V) 898-9820
CA 213 GLENDALE	956-8235		(B/V) 507-1006
CA*415 HAYWARD	881-1382		
CA 213 HOLLYWOOD	624-5230	[LOS ANGELES]	(B/V) 624-2251
CA 213 HOLLYWOOD	689-9040	[LOS ANGELES]	
CA 213 HOLLYWOOD	937-3580	[LOS ANGELES]	
CA 213 INGLEWOOD	624-5230	[LOS ANGELES]	(B/V) 624-2251
CA 213 INGLEWOOD	689-9040	[LOS ANGELES]	
CA 213 INGLEWOOD	937-3580	[LOS ANGELES]	
CA+714 HUNTINGTON BEACH	558-6061	[SANTA ANA]	(B/V) 558-7078
CA 213 LOS ANGELES	624-5230		(B/V) 624-2251
CA 213 LOS ANGELES	689-9040		
CA 213 LOS ANGELES	937-3580		
CA+415 LOS ALTOS	856-9930	[PALO ALTO]	(B/V) 856-9995
CA 213 LONG BEACH	549-5150	[SAN PEDRO]	(B/V) 548-6141
CA+213 MARINA DEL REY	822-9287		(B/V) 306-2984
CA*209 MODESTO	576-2852		(B/V) 576-2852
CA+415 MOUNTAIN VIEW	856-9930	[PALO ALTO]	(B/V) 856-9995
CA+714 NEWPORT BEACH	558-6061	[SANTA ANA]	(B/V) 558-7078
CA*415 OAKLAND	836-4884		(B/V) 836-4911
CA 805 OXNARD	659-4660	[VENTURA]	(B/V) 647-6760
CA*714 PALM SPRINGS	320-7491		
CA+415 PALO ALTO	856-9930		(B/V) 856-9995
CA 213 PASADENA	956-8235	[GLENDALE]	(B/V) 246-0318
CA 415 REDWOOD CITY	595-0360	[SAN CARLOS]	(B/V) 591-0726
CA 714 RIVERSIDE	824-1710	[COLTON]	(B/V) 824-3805
CA 916 SACRAMENTO	443-7921		(B/V) 448-6262
CA*408 SALINAS	443-4980		(B/V) 443-4940
CA 714 SAN BERNADINO	824-1710	[COLTON]	(B/V) 824-3805
CA 415 SAN CARLOS	595-0360		(B/V) 591-0726
CA 714 SAN DIEGO	231-1922		(B/V) 233-0233
CA 415 SAN FRANCISCO	362-6200		(B/V) 956-5777
CA+408 SAN JOSE	279-8450		(B/V) 279-2425
CA 415 SAN MATEO	595-0360	[SAN CARLOS]	(B/V) 591-0726
CA 213 SAN PEDRO	549-5150		(B/V) 548-6141
CA+714 SANTA ANA	558-6061		(B/V) 558-7078
CA*805 SANTA BARBARA	682-5361		(B/V) 682-5361
CA+408 SANTA CLARA	279-8450	[SAN JOSE]	(B/V) 279-2425
CA+213 SANTA MONICA	822-9287	[MARINA DEL REY]	(B/V) 306-2984
CA+408 SUNNYVALE	279-8450	[SAN JOSE]	(B/V) 279-2425
CA 213 TORRANCE	549-5150	[SAN PEDRO]	
CA*213 WOODLAND HILLS	992-0144		
CA+415 WOODSIDE	856-9930	[PALO ALTO	(B/V) 856-9995
CA 805 VENTURA	659-4660		(B/V) 647-6760

CO 303 AURORA	773-8500	[DENVER]	(B/V)	741-4000
CO 303 BOULDER	773-8500	[DENVER]	(B/V)	741-4000
CO&303 COLORADO SPRINGS	634-5676		(B/V)	473-0263
CO 303 DENVER	773-8500		(B/V)	741-4000
CO 303 LAKEWOOD	773-8500	[DENVER]	(B/V)	741-4000
CT*203 DANBURY	794-9075		(B/V)	794-9075
CT 203 GREENWICH	357-1800	[STAMFORD]	(B/V)	348-0787
CT 203 HARTFORD	522-0344		(B/V)	247-9479
CT 203 MILFORD	789-0211	[NEW HAVEN]	(B/V)	624-5954
CT 203 NEW HAVEN	789-0211		(B/V)	624-5954
CT 203 STAMFORD	357-1800		(B/V)	348-0787
CT 203 WEST HARTFORD	522-0344	[HARTFORD]	(B/V)	247-9479
DC 202 WASHINGTON	347-1400		(B)	347-3061
DC 202 WASHINGTON	783-2050		(V)	347-6093
DE 302 WILMINGTON	737-8550		(B/V)	737-8883
FL 813 CLEARWATER	823-3223	[ST. PETE]		
FL 305 FT LAUDERDALE	764-8880		(B/V)	764-4505
FL*904 HOLLY HILL	252-6637			
FL 904 JACKSONVILLE	356-0790		(B/V)	356-2264
FL 305 MIAMI	371-4801		(B/V)	371-4822
FL 305 ORLANDO	849-9600		(B/V)	422-4088
FL 813 ST. PETERSBURG	823-3223			
FL 813 TAMPA	224-9920		(B/V)	223-1088
FL*305 W PALM BEACH	833-6691			
GA 404 ATLANTA	577-8911		(B/V)	523-0834
GA*404 COLUMBUS	324-0684			
GA*404 GAINESVILLE	534-0535			
GA*912 SAVANNAH	236-2605			
HI 808 HONOLULU	524-8110		(B)	524-8221
IA*319 CEDAR RAPIDS	363-2393			
IA 402 COUNCIL BLUFFS	341-7570	[OMAHA,NE]	(B/V)	341-7733
IA*515 DES MOINES	288-7163		(B/V)	288-4403
ID*208 BOISE	344-7823			
IL+312 ARLINGTON HEIGHTS	372-4901	[CHICAGO]	(B)	263-3069

			(V)	726-1957
			(B/V)	263-3638
			(B/V)	938-0600
IL 217	CHAMPAIGN	384-0011 [URBANA]	(B/V)	384-6428
IL+312	CHICAGO	372-4901	(B)	263-3069
			(V)	726-1957
			(B/V)	263-3638
			(B/V)	938-0600
IL+312	CICERO	372-4901 [CHICAGO]	(B)	263-3069
			(V)	726-1957
			(B/V)	263-3638
			(B/V)	938-0600
IL 314	EAST ST. LOUIS	231-8800 [ST. LOUIS, MO.]	(B/V)	241-8150
IL+312	OAK PARK	372-4901 [CHICAGO]	(B)	263-3069
			(V)	726-1957
			(B/V)	263-3638
			(B/V)	938-0600
IL+309	PEORIA	637-8601	(B/V)	637-8570
IL+312	SKOKIE	372-4901 [CHICAGO]	(B)	263-3069
			(V)	726-1957
			(B/V)	263-3638
			(B/V)	938-0600
IL 217	SPRINGFIELD	753-1362	(B/V)	753-1373
IL 217	URBANA	384-0011	(B/V)	384-6428
IN*219	GARY	882-6300	(B/V)	882-8800
IN 317	INDIANAPOLIS	635-9630	(B/V)	634-5708
IN*317	KOKOMO	456-3851		
IN 219	MISHAWKA	234-9071 [SOUTH BEND]	(B/V)	233-7104
IN 219	OSCEOLA	234-9071 [SOUTH BEND]	(B/V)	233-7104
IN 219	SOUTH BEND	234-9071	(B/V)	233-7104
KS 816	KANSAS CITY	474-1600 [KANSAS CITY,MO]	(B/V)	421-0375
KS*913	TOPEKA	232-6816		
KY*502	FRANKFORT	223-1841		
KY*606	LEXINGTON	233-0312		
KY 502	LOUISVILLE	589-7520	(B/V)	589-5580
LA*504	BATON ROUGE	343-0753		
LA*318	MONROE	387-6330		
LA 504	NEW ORLEANS	524-0783	(B)	524-4094
LA*318	SHREVEPORT	221-2984	(B/V)	221-5833
MD*301	ANNAPOLIS	266-6886		
MD 301	BALTIMORE	962-5010	(B/V)	685-3339
MD 202	BETHESDA	347-1400 [WASH., DC]	(B)	347-3061
			(V)	347-6093
MD 301	DUNDALK	962-5010 [BALTIMORE]	(B/V)	685-3339

MD 202	ROCKVILLE	347-1400	[WASH., DC]	(B) 347-3061 (V) 347-6093
MD 202	SILVER SPRING	347-1400	[WASH., DC]	(B) 347-3061 (V) 347-6093
MD 301	TOWSON	962-5010	[BALTIMORE]	(B/V) 685-3339
MA 617	ARLINGTON	338-1400	[BOSTON]	(B/V) 542-0754
MA 617	BOSTON	338-1400		(B/V) 542-0754
MA 617	BROOKLINE	338-1400	[BOSTON]	(B/V) 542-0754
MA 617	CAMBRIDGE	338-1400	[BOSTON]	(B/V) 542-0754
MA 413	CHICOPEE	739-7221	[SPRINGFIELD]	
MA 413	HOLYOKE	739-7221	[SPRINGFIELD]	
MA*617	LEXINGTON	863-1550		(B/V) 863-1565
MA 617	MEDFORD	338-1400	[BOSTON]	(B/V) 542-0754
MA 617	NEWTON	338-1400	[BOSTON]	(B/V) 542-0754
MA 617	QUINCY	338-1400	[BOSTON]	(B/V) 542-0754
MA 617	SOMERVILLE	338-1400	[BOSTON]	(B/V) 542-0754
MA 413	SPRINGFIELD	739-7221		
MA 617	WALTHAM	338-1400	[BOSTON]	(B/V) 542-0754
MA*617	WORCESTER	755-4810		(B/V) 755-4740
MI 313	ANN ARBOR	996-0351		(B/V) 996-5995
MI 313	DETROIT	964-5538		(B/V) 964-2989
MI*313	FLINT	233-3050		(B/V) 233-3050
MI*616	GRAND RAPIDS	458-1200		(B/V) 774-0966
MI*616	KALAMAZOO	385-0160		
MI*517	LANSING	372-5400		(B/V) 372-5420
MI*517	SAGINAW	790-5166		
MI*313	WARREN	575-9230		
MN*218	DULUTH	722-0906		
MN 612	MINNEAPOLIS	339-0150		(B/V) 338-3782
MN 612	ST. PAUL	339-0150	[MINNEAPOLIS]	(B/V) 338-3782
MO 314	FLORISSANT	231-8800	[ST. LOUIS]	(B/V) 241-8150
MO 816	KANSAS CITY	474-1600		(B/V) 421-0375
MO 314	ST. LOUIS	231-8800		(B/V) 421-3615
MS*601	JACKSON	969-0036		
MT&406	HELENA	443-0000		
NE 402	OMAHA	341-7570		(B/V) 341-7733

N

NH+603	CONCORD	224-8110		(B/V) 224-1024

NH*603 PORTSMOUTH	431-2302		
NV 702 LAS VEGAS	733-2158		(B/V) 737-6861
NJ*609 ATLANTIC CITY	348-0561		
NJ 201 BAYONNE	623-6818	[NEWARK]	(B/V) 623-0469
NJ 201 JERSEY CITY	623-6818	[NEWARK]	(B/V) 623-0469
NJ 609 MARLTON	983-9650		(B/V) 983-8351
NJ*201 MORRISTOWN	455-0266		(B/V) 455-0275
NJ*201 NEW BRUNSWICK	246-1090		
NJ 201 NEWARK	623-6818		(B/V) 623-0469
NJ*201 PASSAIC	777-0952		
NJ 201 PATERSON	742-0858		(B/V) 278-5960
NJ 609 TRENTON	392-6101		(B/V) 989-8847
NJ 201 UNION CITY	623-6818	[NEWARK]	(B/V) 623-0469
NM 505 ALBUQUERQUE	243-7701		(B/V) 243-4479
NM*505 SANTE FE	982-4282		
NY 518 ALBANY	445-9111		(B/V) 465-8444
NY*607 BINGHAMPTON	772-0650		
NY 716 BUFFALO	847-0600		(B/V) 847-1440
NY*516 DEER PARK	586-7810		
NY 516 HEMPSTEAD	292-0320		(B/V) 481-6012
NY 212 NEW YORK	736-0099		(B/V) 947-9600
NY 212 NEW YORK	279-1000		(B/V) 947-9600
NY*914 POUGHKEEPSIE	473-5600		
NY 716 ROCHESTER	454-3430		(B/V) 454-1020
NY 518 SCHENECTADY	445-9111	[ALBANY]	(B/V) 465-8444
NY 315 SYRACUSE	472-5503		(B/V) 472-5583
NY 518 TROY	445-9111	[ALBANY]	(B/V) 465-8444
NY 914 WHITE PLAINS	682-8777		(B/V) 946-3176
NC&704 ASHEVILLE	253-3517		(B/V) 253-3517
NC 704 CHARLOTTE	374-0371		(B/V) 332-3131
NC+919 DAVIDSON	549-8311	[RESRCH. TR. PK.]	(B/V) 549-8139
NC+919 DURHAM	549-8311	[RESRCH. TR. PK.]	(B/V) 549-8139
NC$919 GREENSBORO	275-0231		(B/V) 273-2851
NC+919 RALEIGH	549-8311	[RESRCH. TR. PK.]	(B/V) 549-8139
NC+919 RESEARCH TRI. PARK	549-8311		(B/V) 549-8139
NC 919 WINSTON-SALEM	761-1957		(B/V) 725-2126
ND*701 BISMARK	663-5081	[MANDAN]	
ND*701 MANDAN	663-5081		
OH 216 AKRON	762-9791		
OH*216 CANTON	452-0903		

OH 513 CINCINNATI	621-7017		(B/V) 579-0390
OH 216 CLEVELAND	241-0940		(B/V) 696-4225
OH 614 COLUMBUS	463-1400		(B/V) 461-1853
OH 513 DAYTON	461-1570		(B/V) 461-5254
OH 216 EUCLID	241-0940	[CLEVELAND]	(B/V) 696-4225
OH 216 KENT	678-5115		
OH 216 PARMA	241-0940	[CLEVELAND]	(B/V) 696-4225
OH*513 SPRINGFIELD	323-8433		
OH*419 TOLEDO	255-7805		(B/V) 225-7881
OH 216 YOUNGSTOWN	743-2296		
OK*918 BARTLESVILLE	336-0020		
OK 405 BETHANY	232-4550	[OKLAHOMA CITY]	(B/V) 232-4546
OK 405 NORMAN	232-4550	[OKLAHOMA CITY]	(B/V) 232-4546
OK 405 OKLAHOMA CITY	232-4550		(B/V) 232-4546
OK*405 STILLWATER	624-1112		
OK 918 TULSA	584-3215		(B/V) 584-3247
OR 503 PORTLAND	243-2800		(B/V) 243-2815
PA*215 ALLENTOWN	435-8268		(B/V) 435-3330
PA*814 ERIE	453-7561		(B/V) 453-6859
PA+717 HARRISBURG	236-3202		(B/V) 236-6882
PA*814 JOHNSTOWN	535-7576		(B/V) 835-8541
PA 412 PENN HILLS	288-9950	[PITTSBURGH]	(B/V) 288-9974
PA 215 PHILADELPHIA	574-0620		(B/V) 574-9462
PA 412 PITTSBURGH	288-9950		(B/V) 288-9974
PA*717 SCRANTON	961-5321		
PA*412 SHARON	346-6576		
PA 215 UPPER DARBY	574-0620	[PHILADELPHIA]	(B/V) 574-9462
PA*717 YORK	846-6550		(B/V) 846-6550
RI 401 PROVIDENCE	272-9290		(B/V) 751-7912
RI 401 WARWICK	272-9290	[PROVIDENCE]	(B/V) 751-7912
SC*803 CHARLESTON	722-4352		(B/V) 722-4303
SC*803 COLUMBIA	254-1108		(B/V) 254-0695
SC*803 GREENVILLE	233-3488		(B/V) 233-3486
SC*803 SPARTANBURG	583-5421		
SD*605 PIERRE	224-6188		
TN*615 CHATTANOOGA	756-5323		(B/V) 756-1161
TN*615 KNOXVILLE	523-5500		(B/V) 523-5500
TN 901 MEMPHIS	525-2563		(B/V) 521-0215
TN 615 NASHVILLE	244-8310		(B/V) 244-5099

TX*915 ABILENE	676-7701			
TX 512 AUSTIN	926-4360		(B/V)	928-3560
TX 214 DALLAS	748-0127		(B/V)	748-6371
TX 817 FORT WORTH	336-7791		(B/V)	332-4307
TX 713 HOUSTON	224-3380		(B/V)	225-9359
TX 512 LACKLAND	227-7784	[SAN ANTONIO]	(B/V)	227-0182
TX*713 NEDERLAND	724-2341			
TX*915 ODESSA	332-6883			
TX*915 SAN ANGELO	944-9670		(B/V)	944-8502
TX 512 SAN ANTONIO	227-7784		(B/V)	227-0182
UT+801 SALT LAKE CITY	364-5420		(B/V)	359-0149
VA 202 ALEXANDRIA	347-1400	[WASH., DC]	(B)	347-3061
	783-2050	[WASH., DC]	(V)	347-6093
VA 202 ANNANDALE	347-1400	[WASH., DC]	(B)	347-3061
	783-2050	[WASH., DC]	(V)	347-6093
VA 804 CHESAPEAKE	625-8291	[NORFOLK]	(B/V)	625-1186
VA 202 FAIRFAX	347-1400	[WASH., DC]	(B)	347-3061
	783-2050	[WASH., DC]	(V)	347-6093
VA 202 FALLS CHURCH	347-1400	[WASH., DC]	(B)	347-3061
	783-2050	[WASH., DC]	(V)	347-6093
VA*703 HERNDON	435-3333			
VA*804 NEWPORT NEWS	596-6600		(B/V)	596-6600
VA 804 NORFOLK	625-8291		(B/V)	625-1186
VA 804 PORTSMOUTH	625-8291	[NORFOLK]	(B/V)	625-1186
VA 804 RICHMOND	358-1941		(B/V)	780-0426
VA 202 VIENNA	347-1400	[WASH., DC]	(B)	347-3061
			(V)	347-6093
VA 202 SPRINGFIELD	347-1400	[WASH., DC]	(B)	347-3061
			(V)	347-6093
VA 202 VIENNA	347-1400	[WASH., DC]	(B)	347-3061
			(V)	347-6093
VA 804 VIRGINIA BEACH	625-8291	[NORFOLK]	(B/V)	625-1186
VT*802 MONTPELIER	229-4966			
WA*206 AUBURN	939-8200			
WA 206 BELLEVUE	447-9012	[SEATTLE]	(B/V)	625-9612
WA 206 SEATTLE	447-9012		(B/V)	625-9612
WA 509 SPOKANE	455-7601		(B/V)	455-4071
WA*206 TACOMA	627-1717		(B/V)	627-1791
WA*206 LONGVIEW	577-5835			
WI*715 EAU CLAIRE	835-4641			
WI 608 MADISON	251-5904		(B/V)	257-5010
WI 414 MILWAUKEE	271-2560		(B/V)	271-3914

WV*304 CHARLESTON	345-6450	(B/V) 345-6471
WY*307 CHEYENNE	778-2721	
IN-WATS 800 CO C_FIX TO	424-9494	(B/V) 424-9494

DOE/RECON User's Manual

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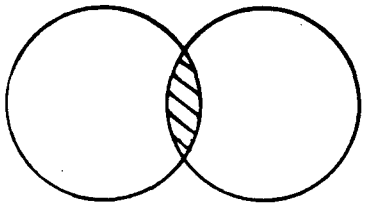
Glossary

Access
(Verb) to gain entrance to 1) a computer; 2) a file or portion of a file.

Accession Number
see Citation Number

Aleph-Null
The index term used to select all items in a file having fewer than 10,000 entries. Referred to as All Records in some data bases.

AND Logic
AND (*) - A Boolean operator. If there are two sets, A and B, the combination A*B equals items common to both A and B.



Baud
(Named for Emile Baudot) A unit of signaling speed equal to the number of discrete conditions or signal events per second. For example, one baud equals one-half dot cycle per second in Morse code, one bit per second in a train of binary signals, and one 3-bit value per second in a train of signals each of which can assume one of eight different states. Number of bits per second which may be transmitted over the line.

Bit
A contraction of the words Binary Digit.

Boolean Expression
An expression containing a Boolean operator:
1*2 (AND), 1+2 (OR), 1-2 (NOT).

Boolean Operator
A logical operator used to combine sets. The three Boolean operators are AND, OR, and NOT.

BROADer TERMs
: Include the NARROWer TERMs beneath them; for example SOLAR HEATING SYSTEMS is the BROADer TERM for both PASSIVE SOLAR HEATING SYSTEMS and SOLAR-ASSISTED HEAT PUMPS

Citation Number
: The number which identifies a DOE/RECON citation. Also called accession number.

COMMAND
: A COMMAND is an instruction that the computer can understand and carry out. Issue a COMMAND by typing a word or phrase at your computer terminal.

COMMAND Format
: The order in which the parts of a command are entered.

CRT
: A terminal with a television screen. The term CRT is an abbreviation for cathode ray tube. The picture tube in a television set is a cathode ray tube.

Cursor
: A movable symbol used to indicate where the next data entered by the user or the computer will begin.

Data
: In DOE/RECON, data may be factual, e.g., statistics, or bibliographical, e.g., a report citation, depending on the needs of the developer and users of the data base.

Data Base
: A collection of data usually organized for rapid searching and retrieval of specific parts.

Data File
: see Data Base

Default
: Used in the absence of a command. At several points in the DOE/RECON program, DOE/RECON will provide a response if you do not provide one or if you enter an inappropriate one:

  EXPAND — If no prefix is entered, DOE/RECON will expand the index term (IT) portion of the index.

  DISPLAY — a. If no format is chosen, DOE/RECON will display the citations in format 2.

  b. If no citation number range is specified, DOE/RECON will begin displaying the set contents with the first citation.

Descriptor
: A word or phrase, usually from a controlled vocabulary, used to describe or identify an item.

Dial-up

1. The use of standard telephone lines to access DOE/RECON.
2. A terminal using such lines.

Direct Mode

Obtaining a result without going through intermediate steps.

DOE/RECON

see RECON

Down

The situation occurring when all or part of the DOE/RECON system is malfunctioning.

ENTER

You ENTER input to the computer when you type the input on the keyboard of your terminal.

Entry

The complete information record for an item included in a data base.

File

see Data Base

File Number

The number which identifies a DOE/RECON data base.

Front-end Computer

The computer which handles incoming calls from various ports.

Full Duplex

A communication facility providing simultaneous transmission and reception.

Function

The uses of a DOE/RECON command.

Half Duplex

A communication facility providing both transmission and reception, but not simultaneously.

Hierarchy

Hierarchy refers to the organization of related topics into more inclusive (BROADer) and more specific (NARROWer) terms. The NARROW terms for a subject divide the subject into different sub-topics.

ID

Identification code.

DOE/RECON ID - This tells DOE/RECON who you are. It is linked to an alpha-numeric DOE/RECON password.

Telenet ID - This tells Telenet who you are. It is linked to a six digit numeric Telenet password.

Indirect Mode

Obtaining a result by going through one or more intermediate steps.

Input

1. (Noun) the information or instruction entered into the system.
2. (Verb) to enter a command or data.

Logoff

The process of breaking telephone contact between your terminal and the computer.

Logon

The process of establishing two-way communications between your computer terminal.

Logon ID

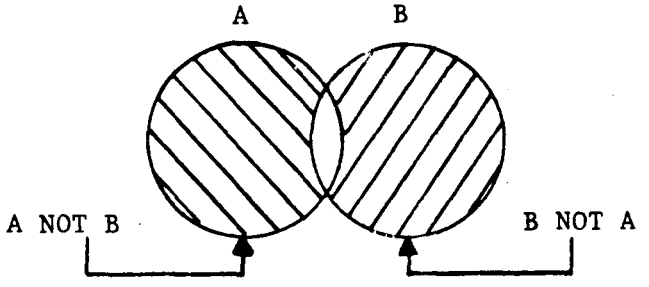
A code that tells the computer what your name is.

NARROWer TERMs

Divide a subject into the different parts that make up the subject. For example, PASSIVE SOLAR HEATING SYSTEMS and SOLAR-ASSISTED HEAT PUMPS are the NARROWer TERMs that describe the subject SOLAR HEATING SYSTEMS.

NOT Logic

NOT (-) - A Boolean operator. If there are two sets, A and B, the combination A-B equals items in set A but not in set B.



Online

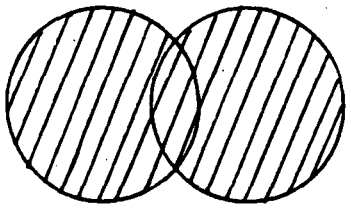
Able to communicate and interact directly with the computer.

Operator

1. A person who operates a machine.
2. (Mathematics) a symbol used to indicate the mathematical process to be performed. In Boolean algebra, the operators are AND, OR and NOT.

OR Logic

OR (+) - A Boolean operator. If there are two sets, A and B, the combination A+B equals items in either set A or set B or both.



Output

1. (Noun) the information or results produced by a data processing operation.
2. (Verb) to display these results.

Page

1. (Noun) a CRT screenful of data or its equivalent.
2. (Verb) to display one or more pages of data in succession.

Parity Check

A method of error detection using an extra bit to make the total number of bits in a character either odd or even. If a character is sent with even parity, it should be received with even parity if no errors are introduced by the communication process.

Password

A secret code known only to you and the computer and used to authenticate your identity.

Port

Device which receives incoming calls to the computer.

Precision

Measure of retrieval effectiveness; percentage of relevant documents received

Prefix

The 2-letter code representing the various sections of each data base's index.

PRINT

The offline output command. If no format is specified, DOE/RECON will use format 2.

Program Command

A command used within the DOE/RECON program to locate, process, and output data.

Real Time

The actual time in which a physical process occurs.

RECON
: (REmote CONsole) A computerized real-time, online, time-shared information retrieval system providing remote access to bibliographic and other data bases; the version described in this manual is that developed by DOE and is called DOE/RECON.

Reference Number
: E-reference number - A number that identifies the position of a term in an EXPAND display.
: R-reference number - A number that identifies the position of a term in a second-level EXPAND display.

Related Terms
: Thesaurus terms which are close in subject, but are not hierarchically related.

Remote Access
: The ability to enter a computer system or a file through a terminal located at a distance from the central computer.

SELECT
: A command telling the computer you wish to specify a subject for which it is to locate all relevant information and prepare a bibliography. If no prefix is entered, DOE/RECON will assume the term is an index term when you use direct mode selection.

Sequential Number
: Consecutive number within a set.

Session
: All the activity you perform at your terminal between the time you logon and logoff.

Set
: A group of entries produced as a result of a program command.

Syntax
: The structure of the parts of a DOE/RECON command.

System
: Collectively, the terminals, computers, programs, people, etc., which must work together in order for DOE/RECON to function properly.

Terminal
: A machine used to communicate with a computer over telephone lines. The terminal will have a typewriter keyboard, a device for connecting a telephone and either a printer, a television screen or both. (The screen is called a CRT.)

Time-Shared
: Use of a computer by a number of users simultaneously with jobs handled in turn by the computer.

Tutorial
: A short introductory course in the use of DOE/RECON provided by the DOE/RECON program and designed for individual teaching.

Up
: The situation occurring when the computer or other part of the system is working properly.

Warm Start
: The situation arising when the user can continue his work session at the point where he was stopped when the system went down.

Work Session
: The time during which a user works in a given file; the session begins when the user enters the BEGIN command and ends when the user changes to another file or enters an END command.

Work Set
: see Set

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