

FOR ELCAP INTERNAL USE

GETTING STARTED

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## GETTING STARTED

### 1.0 INTRODUCTION

This User's Guide is intended for the use of any analyst involved in the analysis of ELCAP data. The User's Guide provides information on accessing the ELCAP analysis system and discusses what information is actually available through the system. Detailed discussions are provided for many topics, including getting started on the ELCAP system, the data extraction utilities (EASE), graphical output, problem tracking, and how the data was collected and processed.

The ELCAP analytical environment is shown in Figure 1. The figure shows that the load data and the characteristics data are stored separately but accessed simultaneously by the extraction utility (EASE). The extracted data may then be processed in a variety of ways, including through statistical packages or it may be displayed in a variety of graphical formats. The remainder of this guide is devoted to a thorough discussion of this environment.

The analytical environment itself is designed to provide the analyst with access to the data and with the tools necessary to manipulate the data. The actual manipulations are left up to the analyst. The environment is not designed to force you as an analyst in to certain types of analyses. Certain analytical procedures that were anticipated by the programming staff have been greatly streamlined, but the flexibility of the system is such that almost any conceivable analytical procedure can be supported.

This guide is not documentation of the results for any previous analytical work nor is it a description of how any previous work was done.

One final point that should be made in the introduction is that this Guide is a working document for ELCAP analysts. The ELCAP analytical environment is not static. Improvements are being made in all phases of the environment. These improvements can be expected to continue for the life of the project and updated versions of this guide will be released. This guide is not written for use of the general public. Most of the document has not been peer reviewed or cleared through normal PNL clearance and should not be released to the public.

## 2.0 SETTING UP

With any new endeavor, getting started is the hardest part. Analysis on the ELCAP system is no exception to this rule. Access to the ELCAP data is controlled at several levels as part of our stringent quality control requirements. The whole system is complicated enough that you will probably not be able to just sit down and start. This section is designed to tell you what you need to do and who can help you do it.

The first requirement is a computer terminal. Just about any terminal will work but a graphics terminal is extremely handy for analysis. If your terminal already has access to either the AVAX in Richland or to one of the ELCAP Microvaxes in Portland, Seattle or Richland, you can go to the next step. If you do not have access to these systems, contact one of the System Managers on the list of personnel in the appendix.

Once you have access to the ELCAP computing network, you need accounts on any computer on which you intend to work. You will need a personal account on each machine you utilize and project accounts on each machine also. The personal account is used mainly for mail messages and as an access to your project accounts. The project accounts are where your actual work on the ELCAP data will be performed. Any number of people may share a project account but only you have access to your personal account. The project account is granted access to the data and to the tools necessary to manipulate the data. Personal accounts do not have access to data or the necessary ELCAP tools. Both personal and project accounts must be set up by the System Manager on your computer. You will need to fill out a PNL VAX Computer Center User ID Form and PNL VAX Computer Center PROJECT Request Form to set up these accounts. A copy of these forms is included in the appendix. The forms are also available from any System Manager. The use of these accounts assumes at least minimal familiarity with the VAX operating system, VMS. The rest of this document uses common VMS terminology without detailed explanation.

At this point you have access the ELCAP computer network but nothing else. Now you need to get specific data access and access to the Characteristic Data Base (CDB). Access to any ELCAP data requires the concurrence of the ELCAP program managers, the ELCAP Security Officer, or the Data Processing Manager. Access to the load data is then granted by the AVAX System Manager. Access to the Characteristics Data Base is granted by the Characteristics Data Base Administrator. (See the appendix for a list of ELCAP staff and their titles.) Access to the various software tools is controlled by the System Manager and is usually given to the project account when it is first set up. A more complete list of the access identifiers necessary for analysis is given in the EASE Users Manual. Your System Manager or any of the other people listed in this paragraph know what access and privileges you will need and will be happy to help you get set up.

In each of your project accounts on the AVAX you should include in a LOGIN.COM file a line that reads:

```
$ @ELCAP$INFORM:[LOGIN]ANALYSIS_LOGIN.COM
```

This line will give you easy access to the tools discussed later in this section. If your analysis is on residential data, you will need the line

```
$ SECTOR := RES
```

to use some of the tools. If your analysis is on commercial data, the line

```
$ SECTOR := COM
```

should be used. If for some reason you wish to look at residential and commercial data simultaneously, do not define SECTOR and contact the Data Processing Manager for further details. If you intend to run the PC version of EASE or if you intend to run any version of EASE from one of the Microvaxes, you will need the line:

```
$ @elcap$easelogin
```

in the LOGIN.COM in your PERSONAL ACCOUNT on the AVAX. This is because the EASE program on a remote node will actually go through your personal account to get to the data. If you intend to run EASE on a PC or a remote node, please check with the EASE Coordinator and the appropriate Microvax System Manager for further details on setting up. Essentially, you will need the same accesses and LOGIN.COM files that you need on the AVAX but there are some differences.

Another important entry in your personal account LOGIN.COM should be :

```
$ MAIL := @ELCAP$INFORM:[LOGIN]MYMAIL.COM
```

This allows you to access the ELCAP name list for electronic mail which is explained in Section 6 of this document.

### 3.0 SITE, DI AND PX

One of the first oddities you will note about ELCAP is the use of three apparently random series of numbers to identify ELCAP sites. This has been and will probably continue to be one of the more confusing parts of the ELCAP system. The three sets of numbers are called PX, DI, and SITE. The number of most interest to the analyst is SITE but you should be aware of the others.

The PX number is a property control number associated with the actual piece of hardware (in this case a data logger ) at each building. If you were to visit an ELCAP building, you would see a small sticker on the data logger that has a PX number on it. This is the only number associated with the site at the time of installation, so the earliest paperwork associated with a building has only a PX on it. Each PX is unique and each data logger keeps the same PX for all times. The PX is a four-digit number between about 2300 and 4200. There is no relationship between the PX number and any feature of the site. The most important feature of PX number is that verification and problem identification are keyed on PX number.

The DI number is the number assigned to the phone number we call to collect the data from a particular logger. DI numbers are assigned by the data acquisition staff after the paperwork for a particular building has returned from the field. There is a unique but random correspondence between DI and PX. DI number in general is a good indicator of how long we have been collecting data for a site. There are exceptions, of course, but usually a small DI indicates an that the site was installed earlier in the study. The most important feature of the DI number is that the data is stored in the archive by DI number. The DI number is a three-digit number between 1 and 760 at this time.

The SITE number is the number assigned to a particular building in the study. An ELCAP building may have up to 9 or more data loggers in the building that must be analyzed simultaneously for the data to make any sense. Each of those 9 loggers will have both a PX and a DI associated with it, but the building will have only one SITE number. For a residential building (a single house), there is usually only one ELCAP data logger with one PX and one DI. In this case, the DI and SITE numbers are the same. In a commercial building with multiple data loggers, the SITE number is the same as the lowest DI number associated with the building. Multifamily buildings, such as apartments, are treated like commercial buildings in this regard. Note that commercial buildings with only one data logger will also have equivalent DI and SITE numbers. The key feature of SITE is that this is the number that should actually be used in your site selection process for analysis. If you use PX or DI, you run the risk of analyzing part of a building as if it were a whole building. If you are doing residential analysis, this is not a problem in ELCAP, but if you are engaged in commercial analysis, the consequences can be profound.

The distinction between these numbers is very important if you are to be able to communicate effectively with ELCAP staff and other analysts. A program that will provide you with all three of these numbers provided you know one of them is discussed below in the section on the cross reference program. The cross reference program will actually supply with some of the other

numbering systems that are applied to various parts of the ELCAP sample. None of these other numbers are applicable to all ELCAP buildings.

You should now have all the accesses, privileges, and command files necessary to function efficiently in the ELCAP analysis system. All you need now is to know how to use it. The rest of the this Users Guide is designed to provide that knowledge.

## 4.0 THE INFORM PROJECT

One of the primary communications methods in ELCAP is the use of the INFORM project as a clearinghouse of information. This project is usable to anyone working on ELCAP and can be accessed as ELCAP\$INFORM. You have read and write privileges to all information in INFORM. Delete privileges are granted only to the operational staff of ELCAP. INFORM contains a number of subdirectories with a wide variety of information in them. A list of those subdirectories and what is in them is given below:

- AIDS- Handy ELCAP programs for getting information out of INFORM
- COM- Summary information on the commercial sector
- COM.ANALNOTES- notes on the analysis of commercial sites
- COM.CI - notes on the commercial inspection of commercial sites
- COM.FIXNOTES- notes on the maintenance work at commercial sites
- COM.VERNOTES- notes on the verification of commercial sites
- INVENTORY- files necessary to generate LINEGRAPH output (see below)
- LOGIN- contains the ELCAP login.com files
- NEWS- ELCAP news of general interest
- NOTES- ELCAP documentation
- REPORTS- LINEGRAPH output (see below)
- RES- Summary information on the residential sector
- RES.ANALNOTES- notes on the analysis of residential sites
- RES.FIXNOTES- notes on the maintenance work at residential sites
- RES.VERNOTES- notes on the verification of residential sites.
- XREF- files for use with the cross reference program. (see below)

To go to any of these subdirectories, type

```
$ sd elcap$inform:[subdirectory].
```

For example, to get to NEWS, type "sd elcap\$inform:[news]". An easier way to get information out of INFORM is to use the handy tools found in elcap\$inform:[aids]. The analysis login.com in elcap\$inform:[login] call outs to many of these tools. The login.com looks like this:

```

$!
$! ELCAP$INFORM:[LOGIN]ANALYSIS_LOGIN.COM
$!
$ DEFINE TERM "SYS$OUTPUT"
$ laserlogin
$ MAIL      :==@ELCAP$INFORM:[LOGIN]MYMAIL.COM
$! SECTOR
DEFINITIONS*****
$ RES      :==@ELCAP$INFORM:[AIDS]RES.COM
$ COM      :==@ELCAP$INFORM:[AIDS]COM.COM
$! VERIFICATION
TOOLS*****
$   wide          :== r ELCAP$INFORM:[aids]tcbwide_cdb
$   Query         :== r ELCAP$INFORM:[aids]query
$ @ ELCAP$INFORM:[AIDS]pircar
$ !*****
$ dir :== directory/date=created/size=all/owner
$!
$! There are 2 symbols commonly used for the cross_ref program.
$! Both are defined below.
$!
$ XREF          :== R ELCAP$INFORM:[xref]cross_ref
$ ID            :== R ELCAP$INFORM:[xref]cross_ref
$!
$!
$ SUMMARY       :== @ELCAP$INFORM:[AIDS]SUMMARY.COM
$ STATS        :== @ELCAP$INFORM:[AIDS]STATS.COM
$ STATUS       :== @ELCAP$INFORM:[AIDS]STATUS.COM
$ ANALYSIS     :== @ELCAP$INFORM:[AIDS]ANALYSIS.COM
$ ANALNOTES    :== @ELCAP$INFORM:[AIDS]ANALNOTES
$ END          :== TYPE ELCAP$USECODE
$ DTH          :== @ELCAP$INFORM:[AIDS]DTH.COM
$ L2C          :== RUN ELCAP$INFORM:[AIDS]CD
$ C2L          :== RUN ELCAP$INFORM:[AIDS]LD
$! ANALYSIS
TOOLS*****
$ @ELCAP$EASELOGIN
$! ANALYSIS GRAPHICS
*****
$ REPORT_GRAPHHS :== RUN ELCAP$GRAPHICS:REPORT_GRAPHHS
$ LOWESS_GRAPHHS :== RUN ELCAP$GRAPHICS:LOWESS_GRAPHHS
$ TRIPLE_GRAPHHS :== RUN ELCAP$GRAPHICS:TRIPLE_GRAPHHS
$ CHOOSE_GRAPHHS :== RUN ELCAP$GRAPHICS:CHOOSE_GRAPHHS

```



The login.com contains many handy tools. Going down through the command file in order we see:

- laserlogin-** allows user to use laser printer on AVAX
- mail-** the ELCAP mail access command (see below)
- RES,COM-** used only by analysts switching between residential and commercial analysis.
- wide-** allows you to get a look at the raw, channel level data
- query-** allow you to get a look at the enduses, verify, logger\_history, and channel relations in the CDB.
- xref, id-** allows you to access the cross reference program (see below)
- summary-** types the entry for a particular PX# in VERNOTES of the current SECTOR.
- stats-** moves you to the appropriate SECTOR summary data directory
- status-** types the maintenance history of a particular PX# in FIXNOTES of the current SECTOR.
- analysis-** types any entries in ANALNOTES for a particular site.
- analnotes-** moves you to the appropriate ANALNOTES directory so that you can make your own entries.
- end-** types a list of the current ELCAP enduses to the screen
- dth-** types a list of the channels currently on for a particular site.
- l2c-** converts ELCAP days to calendar days
- c2l-** converts calendar days to ELCAP days
- @elcap\$easelogin-** sets you up to access the EASE program
- analysis graphics-** a series of data reports you may run after using EASE and creating an output file. See graphics documentation for more information on this.

## 5.0 THE CROSS REFERENCE PROGRAM

This program retrieves a list of sites for a user-specified identifier. For example, if you wish to see information on a site for which you know the RSDP code, you would enter the code and the program would return the record with that code. The program supports seven ways to identify the record(s) you wish to see. These are by site, by PX number, by DI number, by ELCAP study, by RSDP code, by PNWRES code, or by site id.

In the description below, characters to be entered by the user are enclosed in single quotes. When using the program, the quotes are not entered.

All the login command files defined in `ELCAP$INFORM:[LOGIN]` define the symbol ID for this program. This means that ELCAP users can execute the program simply by entering those two letters (i.e., ID) at the dollar sign prompt.

When the program is started, you will see the main menu. From this menu, you choose the number corresponding to the identifier you want to enter. For example, if you have a PX number for which you want information, you would type '2'. After you make that choice you will be prompted to enter a value. At this point you would enter the identifier you want the information for. For example, if you wanted information for PX number 2345 you would type in '2345'.

The next prompt asks you if you want the output directed to the screen or to a file. If you choose screen by typing an 'S', the screen will clear and the information will appear. If the information cannot fit on one screen, you will see a 'MORE' prompt in the lower left corner of the screen. To see more of the information, type a return. If you've seen enough you can type a 'Q' or a '[' to get back to the main menu. If the information does fit on one screen or you have paged through all of the information you will see a prompt that says 'Type <RETURN> to continue'. Typing a return will take you back to the main menu.

If you choose to have the output go to a file, the information you request will be written to a file named `CROSS_REF.TXT` located in your current directory. The program will display a message telling you that it is writing to the file and when it is done it will give you the 'Type <RETURN> to continue' prompt. Typing a return will return you to the main menu. All output from your session will go to the same version of the `CROSS_REF.TXT` file.

Whether the program is writing to the screen or a file, if no records were found that matched your specification, it will display a 'Record not found' message and a 'Type <RETURN> to continue' prompt. A return takes you back to the main menu.

All of the options from the main menu work the same way except the site id option (option 7) does not require you to enter the whole commercial `SITE_ID`. You may enter any number of characters (up to 6) at the 'VALUE' prompt and the program will return all records with a site id that matches those characters. For example, if you wanted to see all records with a commercial

SITE\_ID with the first three letters WAR, you would enter those letters at the value prompt. Typing a return at the 'VALUE' prompt without entering anything else will return all records that have a commercial SITE\_ID associated with them.

Here is an example of how you might use the program. Assume you wanted to know all the DI numbers for site 125. You would type '1' for site at the main menu. The program would display the 'VALUE' prompt at which you would enter '125'. It would then ask you if you wanted it to go to the screen or to the file. Assuming you wanted it to go to the screen you would type 'S'. All of the records for site 125 would be displayed on the screen. From this display you could read off the DI numbers from the column labeled DI NUMBER.

As another example, suppose you wanted a list of all the sites in several different ELCAP studies. You would choose option 4 from the main menu. At the bottom of the screen would appear a list of all the possible ELCAP studies. You would choose one of them, e.g. 'CAP' and enter it at the 'VALUE' prompt. If you wanted the output to go to a file, you would type 'F' at the next prompt. When it was done writing to the file you would type <RETURN> to get back to the main menu. From there, you would repeat the process for another ELCAP study, e.g. 'MCS'. When you were finished and exited the program (by typing '8' at the main menu) you could then view the file you created. You could do this by typing 'TYPE CROSS\_REF.TXT' or 'EDIT CROSS\_REF.TXT'. You could also get a printout of the file on the AVAX printer by typing 'PRINT CROSS\_REF.TXT'. You could also use the facilities of a PC to print and/or download the file.

## 6.0 THE MYMAIL COMMAND FILE

The MYMAIL command file is documented internally in the command file. No further explanation should be needed.

```
$!  
$!  
$! Command file name: ELCAP$INFORM:[LOGIN]MYMAIL.COM  
$!  
$!  
$! This command file allows ELCAP users to use people's names instead of  
$! personal project names (i.e., D3xxxx) when sending electronic mail.  
$! The command file also causes MAIL to drop the user automatically into  
$! the EDT editor whenever a mail message is being sent. This gives  
$! the user access to all the facilities of the editor instead of simply  
$! typing in the message and ending it with a control z. When the user  
$! exits the editor, the mail message is sent. If the user quits out of  
$! the editor, no message is sent.  
$!  
$! The file ELCAP$INFORM:[LOGIN]ELCAPID.TXT contains the information  
$! necessary so MAIL can use names instead of personal project names.  
$! Any ELCAP staff member can add names to this file by entering:  
$!  
$! EDIT ELCAP$INFORM:[LOGIN]ELCAPID.TXT  
$!  
$! Most staff members are already in the file, which is maintained in  
$! alphabetical order. In most cases, the last name is used in the file.  
$! For cases in which two staff members have the same last name, the  
$! initial of the first name is appended to the last name (e.g., STOKESG  
$! for Gerry Stokes and STOKESR for Robert Stokes).  
$!  
$! The reader is referred to the ELCAP Users Guide document entitled  
$! "ECLAP Guide to Electronic Communications: MAIL, PHONE, and DECnet"  
$! for further information on using the VAX mail facility.  
$!  
$! To use this facility, edit your LOGIN.COM file and add a line that  
$! reads:  
$!  
$! $ MAIL ::= @ELCAP$INFORM:[LOGIN]MYMAIL  
$!  
$ @ELCAP$INFORM:[LOGIN]ELCAPID.TXT  
$ MAIL ::= MAIL/EDIT  
$ ASS/USER TT: SYS$INPUT:  
$ MAIL  
$ !
```

## 7.0 LINEGRAPH REPORTS

LINEGRAPH is the name of a series of output files that include an inventory of essentially all the ELCAP load data currently on the system. This includes data available to the analysts, data that will eventually be made available to the analyst, and data that is not of a good enough quality to be released. LINEGRAPH contains an incredible amount of information about the data set, some of which is self explanatory and some of it reasonably complicated. To access the file you are interested in, use the following logical names to print or type the file.

RES\$STATUS  
RSDP\$STATUS  
COM\$STATUS  
CAP\$STATUS

DOE\$STATUS  
MAN\$STATUS  
MFM\$STATUS  
PES\$STATUS

HRES\$STATUS  
HCOM\$STATUS

For a detailed explanation of what the information on linegraph means, please contact any of the ELCAP operations staff or any of the current data analysts.

APPENDIX A

ELCAP CONTACT LIST

## ELCAP CONTACT LIST

PROGRAM MANAGER	Bill Sandusky	509-375-3709
ASSOCIATE PROGRAM MANAGERS - OPERATIONS ANALYSIS	Scott Crowder Rob Pratt	509-375-2337 509-375-3648
USER SUPPORT COORDINATOR	John Stoops	509-375-2804
SECURITY OFFICER	Paula Cowley	509-375-2282
DATA PROCESSING MANAGER	Mark Halverson	509-375-2108
CHARACTERISTICS DATA BASE ADMINISTRATOR	Jan Schwab	509-375-2547
EASE COORDINATOR	Julia Caplinger	509-375-2649
GRAPHICS COORDINATOR	Nancy Wildung	509-375-3771
S COORDINATOR	Craig Conner	509-375-2538
AVAX SYSTEM MANAGER	Wendy Howden	509-375-2784
MICROVAX SYSTEM MANAGERS	Steve Lucas (onsite) Steve Paquin (offsite)	509-375-2036 503-230-5187 FTS 429-5187

APPENDIX B

COMPUTER ACCESS FORMS



```

=====
!           PNL   VAX           !
!           !                   !
!   Computer Center             !
!           !                   !
!   PROJECT Request             !
!           !                   !
=====

```

```

Computer Center Use Only
=====
Assigned Username_____
Assigned UIC      _____
Cost Code Id      _____
Date entered      _____
Date deleted      _____

```

System PNL\_\_\_\_\_

=====

Computer Access

Desired Project Name (8 chars max) \_\_\_\_\_

Work Package \_\_\_\_\_ Organization code \_\_\_\_\_

Desired default device \_\_\_\_\_ (don't care \_\_\_\_\_)

Expiration date \_\_\_\_\_ (End of fiscal year \_\_\_\_\_)

Other PNL systems this project is on \_\_\_\_\_

=====

Project Manager

Last name \_\_\_\_\_ Payroll / Id Number \_\_\_\_\_

Authorized Project Access

Last name _____	Payroll / Id Number _____
Last name _____	Payroll / Id Number _____
Last name _____	Payroll / Id Number _____
Last name _____	Payroll / Id Number _____
Last name _____	Payroll / Id Number _____

=====

Comments:

=====
PNL VAX
Computer Center
User Id Form
=====

Computer Center Use Only
Date entered
Initials
ADP Clearance

User Identification Information

Last name
Payroll / Id Number
Nickname
Phone
Initials
Area
Building
Room
DOE Clearance
Organization

System Use Restrictions

PNL computing equipment is to be used only for approved official business. It is not to be used for any personal application including, but not limited to, games, home finances, or personal business. Misuse or abuse of such equipment, or providing assistance to others for such purposes, may result in disciplinary action, criminal prosecution, and/or loss of employment

Exceptions to this rule are sometimes allowed for purposes related to an employee's professional education. All such exceptions must have written approval in advance from the manager of the computer center or the employee's supervisor.

I understand and agree to conform to the restrictions described above regarding computer use at Battelle.

Signed
Date

Manager's Approval

I have reviewed the personnel file of the above staff member and have found no evidence to preclude his/her use of PNL computer systems.

Signed
Date