



Document 96-001-DC

# HUMAN FACTORS INFORMATION SYSTEM [HFIS]

## USER'S MANUAL

Version 2.2

March 1996

Prepared for  
Human Factors Assessment Branch



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PDR



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# Chapter 1 - Introduction

## 1.1 Purpose

This User Manual presents instructions for the operation of the Human Factors Information System (HFIS).

## 1.2 Overview

This manual briefly describes the background and purpose of the HFIS program and gives instructions for effective use of HFIS.

Each HFIS feature and capability is described in detail, including:

- A description of the function or operation
- Sample screens for each function
- Step-by-step instructions for performing the operation.

Chapter 2 provides narrative descriptions of the Regulatory Programs, Licensee Event Reports (LERs), Emergency Operating Procedures (EOPs), Training Data, Inspection Reports, and Human Performance Investigation Process (HPIP) modules. It is a general overview of the entire system.

Chapter 3 describes the functions available at the HFIS main menu.

Chapter 4 describes functions that are common across all HFIS modules. This section should be reviewed by all users.

Chapters 5, 6, 7, 8, 9, and 10 present instructions for using the Regulatory Programs, Licensee Event Reports (LERs), Emergency Operating Procedures (EOPs), Training Data, Inspection Reports, and Human Performance Investigation Process (HPIP) modules, respectively. Each chapter includes sample screens, identified by figure numbers, for specific functions.

In Chapter 11, the Reports module is described. Methods for report selection, display, and printing are illustrated.

Chapter 12 presents instructions for the HFIS Utilities module. These maintenance functions are for system administrators who need to operate on HFIS database files directly.

The tables in Appendix A present, for each major HFIS module, the correspondence between the names of data fields as they appear in Insert/Edit screens and the field names that appear in the *Fields Pick List* of the Filter screen.

Appendix B, the HFIS Quick Help sheet, is a one-page summary of commands in HFIS.

Appendix C contains coding aids to use when entering data into the Inspection Reports module and the HPIP module.

Appendix D contains a sample of each report available in HFIS.

## 1.3

### Conventions Used in the Manual

Throughout this Manual, module names (e.g., Regulatory Programs) are underlined. Types of screens, such as Browse, Edit, and Menu, are designated by initial capitalization. Function keys, such as **F3**, are printed in boldface and data fields are italicized (e.g., *Plant Name*).

## 1.4

### Installation and Limitations

#### **IMPORTANT!! - READ THIS FIRST!**

This information is provided to help install HFIS so it can be used by several people on a Local Area Network (LAN) or on a single workstation.

HFIS manages data entered by users. The actual databases are therefore not subject to simple installation. To be current, you must get the necessary database and database support files from the people currently managing HFIS. If you do not want to be current, then you can use sample databases provided on diskette.

Reports are generated using a commercial software product: Report Writer. If you want to generate reports, you must already own a legal license to use Report Writer, one license for every workstation that will be using HFIS. Report Writer should be installed according to its own instructions. HFIS requires Report Writer version 4.0f.

HFIS will run on IBM-PC compatibles running MS-DOS only.

## Installation

The HFIS program and necessary system support files are provided on diskette. To install the software, perform the following steps:

1. Navigate to the directory you want the files to go into.
  - On a LAN, this directory will be on a file server, visible to all potential users. All users must have full read/write/create authority on that directory.
2. Install the database files into the selected directory.
  - If you are using the sample files, you must copy the contents of the HFIS Sample Data diskette into the directory and type: HFISDATA at the DOS command line. This will decompress the files.
  - If you are using a copy of the most current data, then it may be compressed differently or come on different media.
3. Copy the files from the HFIS program diskette to that directory.
  - There are files on this diskette that may overwrite files already installed. These files do not contain user-entered data and so can be safely replaced.
4. For each workstation that will run HFIS, you must modify that workstation's AUTOEXEC.BAT file and CONFIG.SYS file and then restart the workstation so the changes will take effect before you run HFIS.

In the AUTOEXEC.BAT file add:  
SET CLIPPER=F60

In the CONFIG.SYS file add:  
FILES=60

The exact number can be more or a little less than 60, depending on the workstation, but 60 is a reasonable choice. If the number is set too low, you will get HFIS errors.

5. If you are installing on a LAN, you do not need to modify the LAN server machine in any way other than creating a directory for HFIS and granting users appropriate authorities to that directory.



## **Limitations**

HFIS is an MS-DOS application. As such, it is not "aware" of Microsoft Windows or other such environments and may not run well in such environments. *HFIS requires as much low memory (first 1 MB memory) as possible, at least 560K.* If you receive "Low Memory" or "Out of Memory" error messages when running HFIS, your only recourse is to make more low memory available to HFIS. Some workstations may not be able to be configured to run HFIS properly without extensive reconfiguration, particularly if HFIS is running in a DOS-box under Windows.

If you want reports or printouts, you must have your printer (network-shared or local) connected to LPT2:.

## Chapter 2 - HFIS Modules

### 2.1 Background

HFIS is an automated management information system that contains databases, or modules, of Regulatory Programs, LER, EOP, Training Data, HPIP, and Inspection Reports information. In addition, the system can generate a variety of specialized reports and has built-in system maintenance functions.

The HFIS project was initiated in January 1990 to develop a database of human factors information that was not readily available from other NRC databases. NRC inspections and audits at plant sites have provided opportunities for collecting human factors information. HFIS is designed to be a convenient means of collecting, storing, retrieving, sorting, and analyzing this information from observations made during site visits, along with information extracted from documents.

### 2.2 Features

Each kind of data HFIS tracks is called a module. The Regulatory Programs module contains information on the compliance status of the licensee for regulatory programs. The LER Data module contains human error-related LER summaries for plants. The EOP Data module contains information related to Emergency Operating Procedure inspections. Training Data module contains information on licensee training programs. The Inspection Report module contains inspection report information. The HPIP module contains human performance investigation process information.

With the Reports module, the system can generate reports and display them on the screen or send them to a printer or a file.

A Utilities module enables the system administrator to maintain the index, back up the system, and maintain report tables and plant-specific data.

### **2.2.1 Regulatory Programs Data**

The Regulatory Programs Database contains the following data: Detailed Control Room Design Review (DCRDR) implementation, implementation date, Final Summary Report, audit date, Technical Evaluation Report (TER) and Safety Evaluation Report (SER) dates for plants contained in the system.

The Safety Parameter Display System (SPDS) section contains data on SPDS certification, implementation level, and implementation date for specific plants.

### **2.2.2 Licensee Event Report (LER) Data**

The LER Database summarizes various LERs related to human performance issues. Each record contains the LER number, event date, event time, power level, personnel involved, contributing factor, and licensee-identified root cause.

### **2.2.3 Emergency Operation Procedure (EOP) Data**

The EOP Database summarizes EOP report and inspection information related to specific plants, regarding such information as dates of inspection, findings, and comments..

### **2.2.4 Training Data**

The Training Database contains information regarding training program accreditation, training inspection dates, report numbers, and microfiche addresses for each training inspection on a plant.

### **2.2.5 Inspection Reports**

The Inspection Reports Database contains information on Systematic Assessment of Licensee Performance (SALP) and Inspection Reports. The SALP information contains data on current, previous, and prior ratings and dates in the areas of plant operations, maintenance, engineering, and plant support. The Inspections Reports selection provides docket and report numbers for human performance items resulting from site inspections. Departments involved, category of performance error, area of concern, details, and violation status of the item are all identified.

### **2.2.6 Human Performance Investigation Process (HPIP) Data**

The HPIP Database provides information on the plant, docket number, event date, personnel codes, activity type, cause, and comments concerning the human elements of reported incidents.

### **2.2.7 Report Generation**

Several reports can be generated with the system. The user is presented with a list of the specific reports available. Reports can be sent to the screen for instant viewing, or to a printer for hard copy output. See Chapter 12 for a detailed description and example of each report.

### **2.2.8 System Utilities**

The system utilities are System Maintenance and View Plant Identification. These can only be accessed by the system administrators with a password.

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## Chapter 3 - Basic Screen Types

After installing HFIS (see Chapter 1), the Main Menu, shown in Figure 3-1, displays a list of the available modules in the HFIS program.

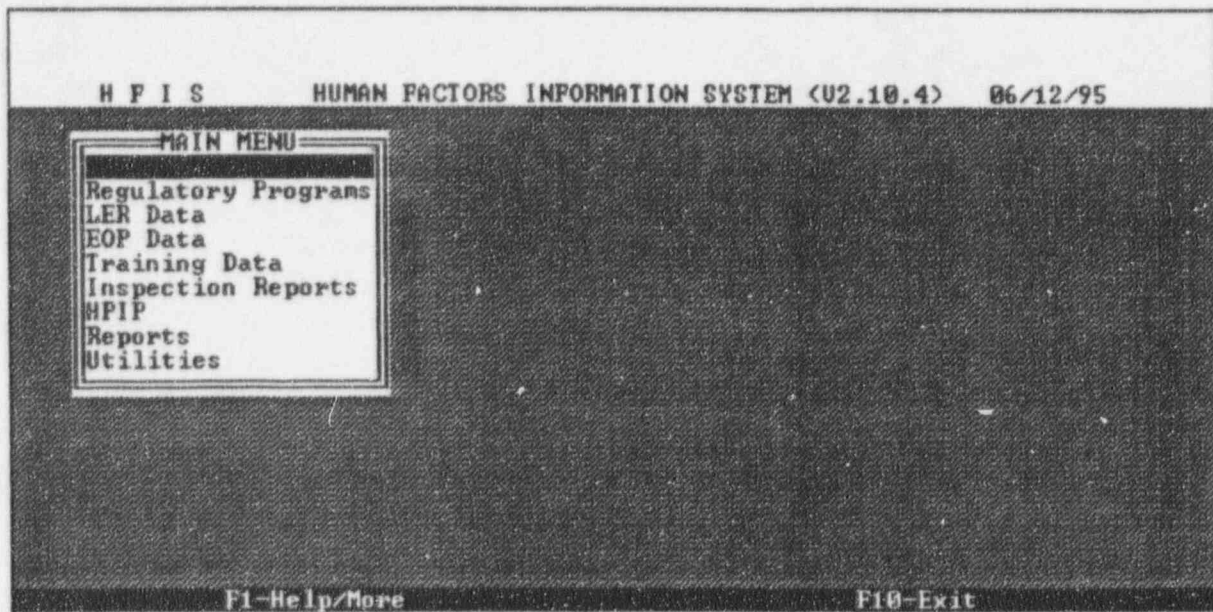


Figure 3-1. Main Menu

The bottom line of the screen always displays a list of function keys and the commands they activate (e.g., **F1-Help/More** in Figure 3-1). This list changes depending on which screen is being displayed. However, there are three standard function keys that are available in any in HFIS module:

- From any screen, press the **Escape** key (**Esc**) to return to the previous screen.
- From any screen, press **F10** to exit HFIS and return to DOS, after you confirm your wish to exit.
- From any screen, press **F1** for a Help screen that lists all available function keys and their commands for that screen.

### 3.1 Types of Screens

Each HFIS module consists of Browse and Edit screens. The function keys you use on a Browse screen are the same for all Browse screens, with a few exceptions. Similarly, the function keys you use on an Edit screen are the same

for all Edit screens, with a few exceptions. Specific function keys for each type of screen (i.e., Browse, Edit, etc.) are described in more detail in Chapter 4.

### 3.1.1 Browse Screens

Browse screens show you all or some portion of the data stored in each module. Use the navigation keys (e.g., up arrow, down arrow) to highlight an individual row on the Browse screen. When you press the **Enter** key on the highlighted record, an Edit screen is displayed on which you can read and/or edit the record you had selected.

In some modules, selecting a record on a Browse screen results in another Browse screen that displays additional data for the record you selected. Pressing **F3- Filter** lets you set a filter that allows you to choose certain records to be displayed in the Browse screen. You can print the results of a filter or export them by saving them to a file using **F4-Export**. These commands are discussed in more detail in Chapter 4.

### 3.1.2 Edit Screens

Edit screens display the contents of one record at a time and allow you to edit the contents. Some modules have so much data in a record that it takes more than one Edit screen to display it all. In these cases, the Edit screen is divided into a number of pages, each page holding the fields you can edit. To move back and forth between pages use the navigation keys.

### 3.1.3 Menu Screens

Menu screens, such as the Main Menu shown in Figure 3-1, also have a common set of function key commands. Menu screens do not display any HFIS data directly, but allow you to select other modules or filters. Chapter 4 discusses Menu screen functions in more detail.

## 3.2 Navigation Keys

Specific keys on your computer keyboard are used for moving around HFIS. These keys operate the same way across different modules and screen types and are listed in Table 3-1.



**Table 3-1. Navigation Keys and Their Actions**

<b>NAVIGATION KEY</b>	<b>ACTION</b>
<b>Down Arrow</b>	Move to the next item in the list. When the last data item on a page is reached, a message is displayed to inform you that you have reached the end of the file.
<b>Up Arrow</b>	Move to the previous item in the list. When the last data item on a page is reached, a message is displayed to inform you that you have reached the beginning of the file.
<b>Left Arrow</b>	Move left one column. This allows the list to be scrolled left to display any data columns that do not fit on the current screen.
<b>Right Arrow</b>	Move right one column. This allows the list to be scrolled right to display any data columns that do not fit on the current screen.
<b>Page Up</b>	Skip to the previous page.
<b>Page Down</b>	Skip to the next page.
<b>Home</b>	Skip directly to the first record in the Browse list.
<b>End</b>	Skip directly to the last record in the Browse list.
<b>Esc</b>	Exit the current mode and return to the previous screen.
<b>Enter</b>	Accept the current selection and continue with the appropriate function (usually Edit).

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## Chapter 4 - Basic Functions

All screens in the HFIS system follow a single format. An example is shown in Figure 4-1. The upper portion of the screen displays the current module and the current filter set on the module.

Function keys and other keys that are active for a particular screen are displayed at the bottom. Available function keys for each type of screen (i.e., Browse, Edit, etc.) are described in this chapter.

### 4.1 Browse Screen Functions

Browse screens let you see many records in a database at once. In each Browse screen, the number of records you can see is displayed in the upper right portion of the screen. Each row is one record, with each field of the record showing as a column. You can move the selection left or right on many Browse screens to see additional fields for each row.

One record on the screen is highlighted. If you press a function key that operates on a record, it will operate on the highlighted record. You can move the highlight bar to a different record by using the arrow keys.

Function keys that are available in most Browse screens are described next.

FILTER->		
H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95		
SELECT PLANT FOR LER LIST      [ 121 ]		
PLANT NAME	DOCKET	PLANT TYPE
ARKANSAS 1	313	PWR
ARKANSAS 2	368	PWR
BEAVER VALLEY 1	334	PWR
BEAVER VALLEY 2	412	PWR
BELLEFONTIE 1	438	PWR
BELLEFONTIE 2	439	PWR
BIG ROCK POINT	155	BWR
BRAIDWOOD 1	456	PWR
BRAIDWOOD 2	457	PWR
BROWNS FERRY 1	259	BWR
BROWNS FERRY 2	260	BWR
BROWNS FERRY 3	296	BWR
BRUNSWICK 1	325	BWR
BRUNSWICK 2	324	BWR
BYRON 1	454	PWR
F1-Help/More    F3-Filter    F4-Export    F5-Add    F9-Sort    F10-Exit		

Figure 4-1. Browse Screen

### F3 - Filter

Displays a series of screens that let you construct a filter to limit the range of records you see in the Browse screen. See Section 4.3 for more about Filter screens.

### F4 - Export

Allows you to export (i.e., copy) the contents of the Browse screen, including all records and some columns you cannot see, to a file, to the screen, or to the printer. After selecting **F4**, you see the screen shown in Figure 4-2. Press **F2-Pick** to select HP LaserJet, Epson FX, or File.

- If you pick File, then the system will prompt you for a file name and destination. It will also allow to choose between a comma delimited or report format for the output file. Report is a more useful format for the output file.
- If you pick HP LaserJet or Epson FX, then the Browse screen data will be sent to the printer (LPT2:). After selecting the number of copies press Enter to actually export your Browse screen data.

From this screen, you can choose **F1** for **Help**, or **F10** to **Exit** HFIS.

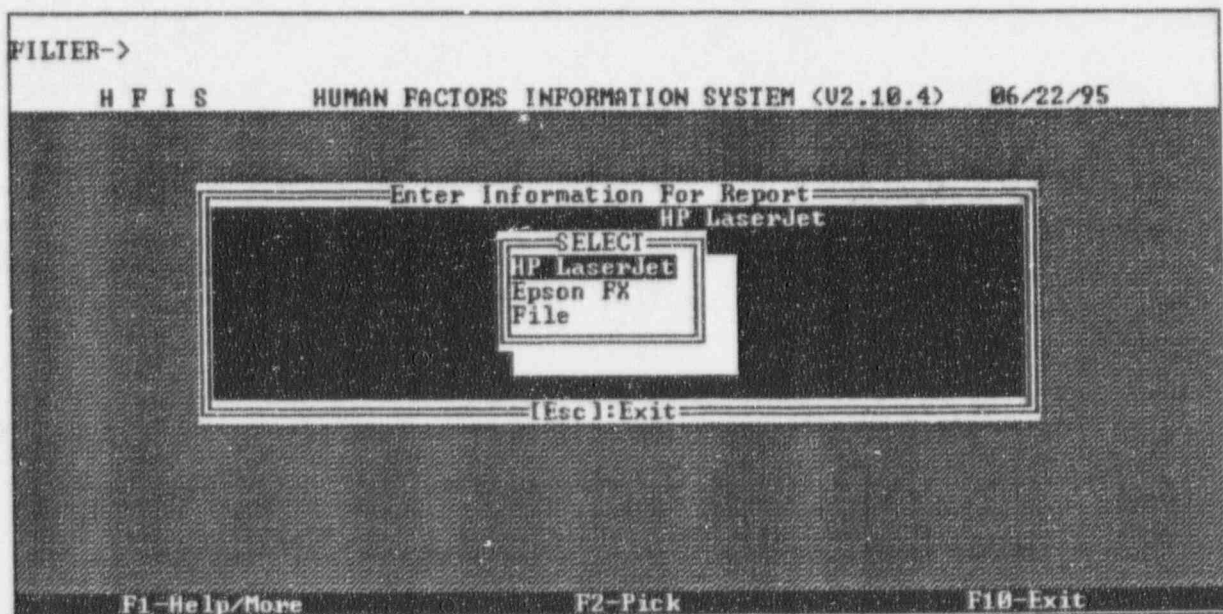


Figure 4-2. Export Screen

### F5 - Add

Adds a new record to the current module and displays an empty record for you to enter information. Even if the module has multiple Browse screens, as does the LER module, pressing **F5-Add** in either Browse screen will display an empty record for the current module. The new record is not saved until you press **F6-Save** or choose "Yes" when asked if you want to save this record. **F5-Add** is only available in the LER, Inspection Reports, and HPIP modules.

### F9 - Sort

Displays a Menu screen for selecting the field by which the records will be sorted. After you select a field from the menu, the records are sorted and redisplayed. Generally, only a few fields are available as **Sort** fields for any module.

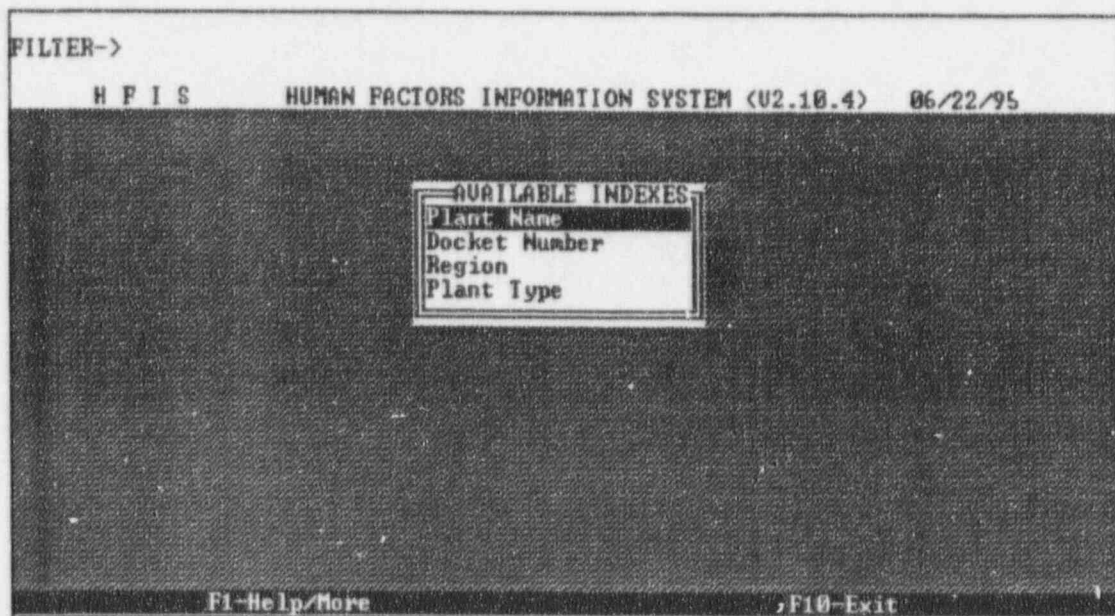


Figure 4-3. Sort Screen

## 4.2 Edit Screen Functions

Changes to records in each module are made on Edit screens. You can select a record to modify in a Browse screen by moving the highlight bar to it and pressing **Enter**. The entire record will be displayed and available for editing. If you press **F5**, a new, empty record will be displayed for you to enter new data.

The records in some modules have too many fields to display in one Edit screen,

so the Edit screen is divided into pages. Each page displays one or more fields in the record. The number of pages is shown in the upper right-hand portion of the screen. Figure 4-4 shows that the page displayed is the first of six pages that make up this record.

In some modules (e.g., LER Data), data fields are grouped together under headings. These headings are treated like giant fields and can be navigated to using special keys (**F7-Next Field** and **F8-Previous Field**). This saves time as you move from one page to another in an Edit screen.

Other important keys for editing records include:

- **Del** - Deletes the character highlighted by the cursor
- **Backspace** - Deletes the character to the left of the cursor
- **Insert** - Toggles between INSERT and TYPEOVER modes.

Function keys specific to Edit screens are described next.

```

FILTER->
      H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)   06/22/95
                        LER ANALYSIS PROTOCOL [ 1 of 6 ]
-----
Plant Name: <ARKANSAS I >      Docket Number<50 - 313>
Event Date <MM/DD/YY>: 05/21/91      LER Number: 91-005
Event Time: 951                  Issue Date: 06/14/91
Power Level:
Personnel Category:
      Licensed Operator      Engineer
      Non-Licensed Operator  Radiological Protection
      Instrument and Control <I & C>  Chemistry
      Y Electrical           Security
      Mechanical             Other
-----
F1-Help  F2-Pick  F5-Copy  F6-Save  F7-Next Fld  F8-Prev Fld  F10-Exit

```

Figure 4-4. Edit Screen

### F2 - Pick

Displays the options, or values, for that field. Only those fields surrounded by angle brackets < > have lists of options associated with them.

When you press **F2-Pick**, a Menu screen showing you that list appears. In some Edit fields, you can select only one value, while in others you may select more



than one. Specific fields are discussed in the chapters on each module. Figure 4-5 displays the Plant Name Look Up list screen. To select a plant, you would press **Enter** when the plant name is highlighted.

Most fields with pick lists allow you to type the value directly into the field; however, others provide only the list of values from which you choose. The pick list can appear on top of the Edit screen or it can cover the entire screen as shown in Figure 4-5.

FILTER->		
H F I S	HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)	06/22/95
PLANT NAME LOOK-UP		
PLANT NAMES		DOCKETS
ARKANSAS 1		313
ARKANSAS 2		368
BEAVER VALLEY 1		334
BEAVER VALLEY 2		412
BELLEFONTE 1		438
BELLEFONTE 2		439
BIG ROCK POINT		155
BRAIDWOOD 1		456
BRAIDWOOD 2		457
BROWNS FERRY 1		259
BROWNS FERRY 2		260
BROWNS FERRY 3		296
BRUNSWICK 1		325
BRUNSWICK 2		324
BYRON 1		454
BYRON 2		455
F1-Help/More		F10-Exit

Figure 4-5. Plant Name Look-up Screen

### F5 - Copy

Duplicates the record you are currently editing, including all the data fields for the record. Use the **Copy** function to create a new record from an edited record. After selecting **F5-Copy**, a Menu screen is displayed for you to select where you would like the duplicate record copied to. You may type this information or press **F2-Pick** to choose from a pick list if available. If you have changed the original you are asked if you want to save the original before you are shown the copy.

### F6 - Save

Saves the data in the current record. If this record was created using the **F5-Add** function, then a new record is created; otherwise the old data is overwritten with the contents of the Edit screen.



### **F7 - Next Field**

Moves to the next field in the record. If an Edit screen has several data fields grouped under a heading, then **F7-Next Field** moves you to the first field of the next heading. Selecting **F7-Next Field** is the same as the Down Arrow except when fields are grouped under headings. Using **F7-Next Field** makes it faster to move through Edit screens with many pages.

### **F8 - Previous Field**

Moves back to the previous field. If an Edit screen has several data fields grouped under a heading, then **F8-Previous Field** moves you to the first field of the previous heading. Selecting **F8-Previous Field** is the same as using the Up Arrow except when fields are grouped under headings. Using **F8-Previous Field** makes it faster to move through Edit screens with many pages.

### **Alt-F7 - Next Record**

Moves to the next data record in the current module without exiting the Edit screen. This is a shortcut for pressing **Esc** to move back to the Browse screen, then **Down Arrow** to select the next record, and then **Enter** to see the Edit screen for the new record. If you select **Alt-F7-Next Record** and you have modified the current record, then you are asked if you want to save your changes before moving to the next record.

### **Alt-F8 - Previous Record**

Moves to the previous data record in the current module without exiting the Edit screen. If you select **F8-Previous Record** and you have modified the current record, then you are asked if you want to save your changes before moving to the next record.

*NOTE: Use **Alt-F8** as a shortcut for pressing **Esc** to move back to the Browse screen, then **Up Arrow** to select the previous record, and then **Enter** to see the Edit screen for the new record.*

## **4.3**

### **Filter Screen Functions**

The Filter screen lets you find and display records that match your specified criteria. You can name and save filters that you created and reload them for use at a later time.

Figure 4-6 shows a typical Filter screen, which is divided into two portions. The upper portion contains the fields labeled **Boolean Operator**, **Field**, **Operator**, and **Value**. These search fields are used to enter the criteria for the filter you are creating. The lower portion shows the database records resulting from the filter search. The search fields used for creating a filter are described below.

- **Boolean Operator** - This search field is used to connect separate filters that you are creating by using **AND**, **OR**, **AND NOT**, and **OR NOT**. These four options appear on a pop-up menu. For example, if you wanted to find all the records whose *Plant Name* is Arkansas 1, and those whose *Plant Name* is Arkansas 2, you would use the Boolean Operator **AND** to connect the two searches.
- **Field**- This search field is used to select the database field for searching, e.g., *Plant Name*. Depending on which module you are in, a "pick list" can be used for selecting field names by pressing **F2-Pick**.

*NOTE: The field names that appear on the pick list are the database names, and not the names that you see on Browse and Edit screens. Use the tables in Appendix A to find the correct database name of the field you wish to search.*

- **Operator**- This field displays a pop-up menu of operators (e.g., equal to, less than, etc.) to use with the **Value** search field as shown below.

USE THIS:	TO FIND VALUES THAT ARE:
Equals	An exact match of the value
Not Equals	Omit the records that match the value
Greater Than	Greater than the value
Greater Than or Equal	Greater than or equal to the value
Less Than	Less than the value
Less Than or Equal	Less than or equal to the value
Contains	Literal text (alphanumeric)

- **Value**- This field is used to type in or select from a pop-up list the value for the field being searched, for example, "Arkansas1".

To create a filter, perform the following steps:

1. From the Browse screen, press **F3-Filter** to create a new filter.
2. On the Filter screen, the highlight bar appears on the lower half of the screen which is currently empty. Press **Enter** to begin entering the search criteria.

- ```

FILTER->
      H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)   06/22/95
===== SET FILTER =====
Boolean Operator: <      >
Field: <      >
Operator: <      >
Value: <      >

Current Filter Value:

_____

F1-Help  F2-Pick  F3-Reset  F5-Load  F6-Save  F8-Del  F9-Exec  F10-Exit

```

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### F2 - Pick

Displays a pick list or a pop-up menu. The menu options presented take into account the current field on the screen and the values that have been entered in other fields in order to present an appropriate list. The Value field may not always have a pick list.

### F3 - Reset

Clears the current filter definition and starts a new filter definition.

### F5 - Load

Displays a list of previously saved filter macros, as shown in Figure 4-7. To load a filter definition, move the cursor bar to it and press **Enter**. Each module has its own set of named filter macros.

**FILTER->**

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95

**SET FILTER**

Boolean Operator: <      >  
Field: <      >  
Operator: <      >  
Value: <      >

**Current Filter Value:**

**SELECT MACRO**

| NAME                |
|---------------------|
| *8 CURRENT MACRO &* |
| ANO1                |

F1-Help      F8-Delete      F10-Exit

Figure 4-7. Load Filter Screen

### F6 - Save

Saves the current filter definition as a named filter macro for future use. Each module can have its own set of filter macros. Filter macros that you create are not available to other users; you have your own set of filter macros for all modules. Figure 4-8 shows the screen for a saving a filter.

|                                                                  |                                                     |
|------------------------------------------------------------------|-----------------------------------------------------|
| FILTER->                                                         |                                                     |
| H F I S                                                          | HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95 |
| SET FILTER                                                       |                                                     |
| Boolean Operator: <                                              | >                                                   |
| Field: <                                                         | >                                                   |
| Operator: <                                                      | >                                                   |
| Value: <                                                         | >                                                   |
| Current Filter Value:                                            |                                                     |
| SAVE MACRO                                                       |                                                     |
| Name for Macro: MACRO NAME                                       |                                                     |
| F1-Help F2-Pick F3-Reset F5-Load F6-Save F8-Del F9-Exec F10-Exit |                                                     |

Figure 4-8. Save Filter Screen

#### F8 - Del

Deletes the currently selected filter element.

#### F9 - Exec

Executes the current filter definition. To clear the currently active filter, enter the filter module, clear the filter using **F3-Reset** and execute the now empty filter using the **F9-Exec** command.

### 4.4 Help Screen Functions

A typical Help screen is shown in Figure 4-9. Help screens provide information on the various function keys available for the current module.

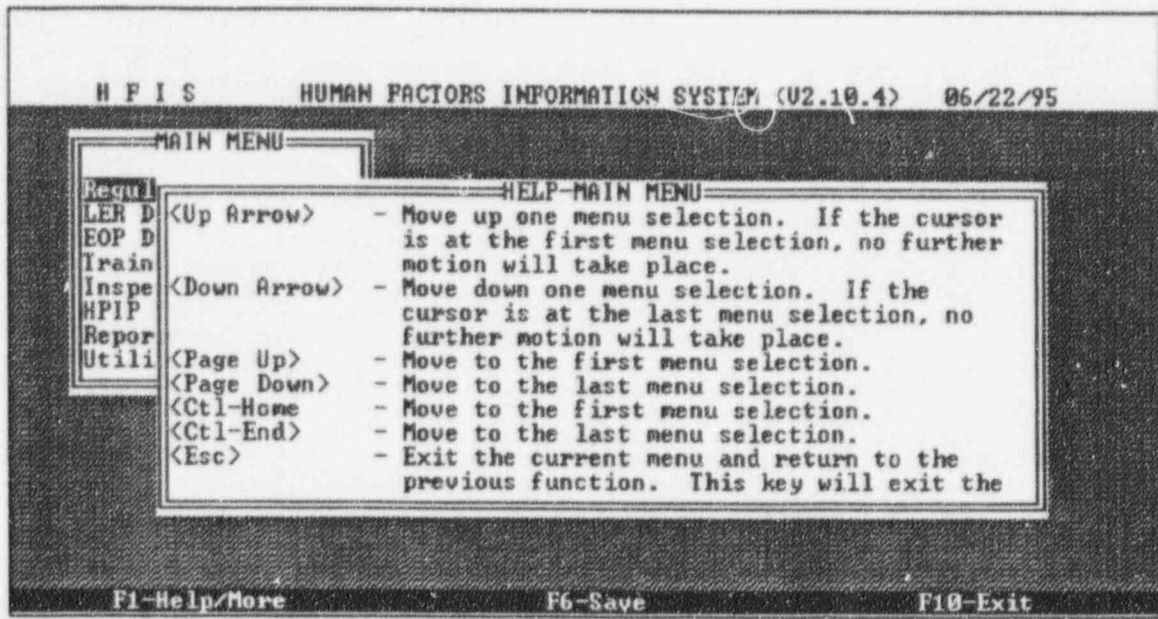


Figure 4-9. Help Screen

If you entered the system password in the Utilities module, then you can edit the contents of the help screen as if it were a memo field. In addition, two more function keys are available.

### F9 - Save

Saves the text of the Help screen, including what is not currently visible, into a text file.

### Alt-F2 - Read

This commands reads data into this Help screen from a text file. This makes it easier to change many Help screens at once.

## 4.5 Memo Screen Functions

Some fields in some modules are **Memo** fields. **Memos** are fields that can contain any amount of textual information. These fields are usually identified by brackets surrounding an asterisk: [\*]. To edit a **Memo** field, first select the asterisk. Then press the **Y** key and press **Enter**. A Memo Edit screen appears as shown in Figure 4-10. Text must be added to **Memo** fields in all upper case letters.







FILTER->

---

HFIS INSPECTION REPORT INSERT/EDIT [ 1 of 1 ]

Site: <CALLAWAY >

Docket 1 <483> Report 1: 93-017  
 Docket 2 < > Report 2: - 0  
 Docket 3 < > Report 3: - 0

Department 
 SELECT DEPARTMENT  
 A OPERATIONS J  
 B INSTRUMENT & CONTROL  
 C ELECTRICAL J
  >

Category >

Area >

Details <06 INADEQUATE PROCEDURE >

Violation < > Doc.Date <12/29/93>

---

F1-Help/More F10-Exit

Figure 4-11. Multiple Selection Screen

FILTER->

---

HFIS INSPECTION REPORT INSERT/EDIT [ 1 of 1 ]

Site: <CALLAWAY >

Docket 1 <483> Report 1: 93-017  
 Docket 2 < > Report 2: - 0  
 Docket 3 < > Report 3: - 0

Department <\*\*\*\*\* MULTIPLE \*\*\*\*\* >

Category <E COMMUNICATION >

Area <Q VERBAL >

Details <29 NO COMMUNICATION >

Violation < > Doc.Date <12/29/93>

---

F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev Fld F10-Exit

Figure 4-12. Multiple Selection Screen

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## Chapter 5 - Regulatory Programs Module

The Regulatory Programs module has one Browse screen and a one-page Edit screen. The Browse screen presents a list of plants from which to choose (Figure 5-1). Each record presents general information concerning the regulatory status of the plant (Figure 5-2).

*NOTE: You cannot add new records in the Regulatory Programs module, but you can edit (make changes to) the existing records.*

Press **Enter** to edit the selected record. The edit screen contains a number of date fields in the form of Month/Day/Year (MM/DD/YY), several Yes/No (Y/N) fields, and a Comment field. To edit these data fields, simply place the cursor on the data item and type over it. The comment field is a **Memo** field for entering text.

Press **F6-Save** to save any changes you have made to a Regulatory Programs record.

FILTER->

HFIS HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95  
SELECT PLANT FOR DATA ENTRY [ 122 ]

| PLANT NAME      | DOCKET | PLANT TYPE |
|-----------------|--------|------------|
| ARKANSAS 1      | 313    | PWR        |
| ARKANSAS 2      | 368    | PWR        |
| BEAVER VALLEY 1 | 334    | PWR        |
| BEAVER VALLEY 2 | 412    | PWR        |
| BELLEFONTE 1    | 438    | PWR        |
| BELLEFONTE 2    | 439    | PWR        |
| BIG ROCK POINT  | 155    | BWR        |
| BRAIDWOOD 1     | 456    | PWR        |
| BRAIDWOOD 2     | 457    | PWR        |
| BROWNS FERRY 1  | 259    | BWR        |
| BROWNS FERRY 2  | 260    | BWR        |
| BROWNS FERRY 3  | 296    | BWR        |
| BRUNSWICK 1     | 325    | BWR        |
| BRUNSWICK 2     | 324    | BWR        |
| BYRON 1         | 454    | PWR        |

F1-Help/More F3-Filter F4-Export F9-Sort F10-Exit

Figure 5-1. Regulatory Programs Browse Screen

FILTER->

|                                                                                   |  |                                                 |  |             |
|-----------------------------------------------------------------------------------|--|-------------------------------------------------|--|-------------|
| H F I S                                                                           |  | HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      |  | 06/22/95    |
|                                                                                   |  | REGULATORY INFORMATION                          |  | [ 1 of 11 ] |
| Plant Name: ARKANSAS 1                                                            |  | Docket Number: 50 - 313                         |  |             |
| DCRDR                                                                             |  |                                                 |  |             |
| DCRDR Fully Implemented? <input checked="" type="checkbox"/>                      |  | DCRDR Implementation Date (MM/DD/YY): 11/24/92  |  |             |
| Final DCRDR Summary Report Date: 06/30/86                                         |  | Audit Date: 09/16/85                            |  |             |
| 1st TER Date: 10/16/85                                                            |  | 2nd TER Date: / /                               |  |             |
| 1st SER Date: 02/03/89                                                            |  | 2nd SER Date: / /      Final SER Date: 02/03/89 |  |             |
|                                                                                   |  |                                                 |  |             |
| F1-Help      F2-Pick      F6-Save      F7-Next Fld      F8-Prev.Fld      F10-Exit |  |                                                 |  |             |

Figure 5-2. Regulatory Programs Edit Screen

## Chapter 6 - LER Module

The Licensee Event Reports (LER) module has two Browse screens and an Edit screen. Each LER record is six pages long. The first Browse screen, shown in Figure 6-1, presents a list of the plant names. To display an LER record, select the plant name from the Browse list and press **Enter**.

The second Browse screen shows you a list of the LERs for that plant (Figure 6-2). Move the highlight bar to the selection and press **Enter** to view the LER record. Figures 6-3 through 6-8 show the screen pages of LER records.

If you use a filter on the LER record Browse screen, and then go back to the LER Plant Browse screen, the filter results are discarded, but the filter itself is not reset. You can chose **F3-Filter** and then **F9-Exec** to re-execute your filter.

| FILTER->                                                 |                                            |            |
|----------------------------------------------------------|--------------------------------------------|------------|
| H F I S                                                  | HUMAN FACTORS INFORMATION SYSTEM <U2.10.4> | 06/22/95   |
| SELECT PLANT FOR LER LIST                                |                                            |            |
| 121                                                      |                                            |            |
| PLANT NAME                                               | DOCKET                                     | PLANT TYPE |
| ARKANSAS 1                                               | 313                                        | PWR        |
| ARKANSAS 2                                               | 368                                        | PWR        |
| BEAVER VALLEY 1                                          | 334                                        | PWR        |
| BEAVER VALLEY 2                                          | 412                                        | PWR        |
| BELLEFONTE 1                                             | 438                                        | PWR        |
| BELLEFONTE 2                                             | 439                                        | PWR        |
| BIG ROCK POINT                                           | 155                                        | BWR        |
| BRAIDWOOD 1                                              | 456                                        | PWR        |
| BRAIDWOOD 2                                              | 457                                        | PWR        |
| BROWNS FERRY 1                                           | 259                                        | BWR        |
| BROWNS FERRY 2                                           | 260                                        | BWR        |
| BROWNS FERRY 3                                           | 296                                        | BWR        |
| BRUNSWICK 1                                              | 325                                        | BWR        |
| BRUNSWICK 2                                              | 324                                        | BWR        |
| BYRON 1                                                  | 454                                        | PWR        |
| F1-Help/More F3-Filter F4-Export F5-Add F9-Sort F10-Exit |                                            |            |

Figure 6-1. LER Plant Browse Screen

FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (U2.10.4) 06/22/95  
SELECT LER FOR DATA ENTRY [ 3,331 ]

| PLANT NAME | DOCKET | LER NUMBER | EVENT DATE | EVENT TIME | POWER |
|------------|--------|------------|------------|------------|-------|
| ARKANSAS 1 | 313    | 91-005     | 05/21/91   | 951        |       |
| ARKANSAS 1 | 313    | 91-006     | 05/30/91   | 0          |       |
| ARKANSAS 1 | 313    | 91-004     | 05/02/91   | 1042       | UNK   |
| ARKANSAS 1 | 313    | 91-012     | 11/11/91   | 2100       | UNK   |
| ARKANSAS 1 | 313    | 92-001     | 04/08/92   | 0          |       |
| ARKANSAS 1 | 313    | 92-002     | 04/21/92   | 0          |       |
| ARKANSAS 1 | 313    | 92-003     | 04/24/92   | 2315       | UNK   |
| ARKANSAS 1 | 313    | 91-010     | 10/05/91   | 0          | UNK   |
| ARKANSAS 1 | 313    | 93-005     | 10/14/93   | 0          | NA    |
| ARKANSAS 1 | 313    | 93-002     | 03/09/93   | 1548       | 100   |
| ARKANSAS 1 | 313    | 93-003     | 09/30/93   | 0          | NA    |
| ARKANSAS 1 | 313    | 93-007     | 11/22/93   | 0          | 100   |
| ARKANSAS 1 | 313    | 93-006     | 10/14/93   | 0          | NA    |
| ARKANSAS 1 | 313    | 94-001     | 01/31/94   | 700        | 100   |
| ARKANSAS 1 | 313    | 94-001     | 08/04/94   | 0          | NA    |
| ARKANSAS 1 | 313    | 94-003     | 10/08/94   | 0          | NA    |

F1-Help/More F3-Filter F4-Export F5-Add F9-Sort F10-Exit

Figure 6-2. LER Record Browse Screen

FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (U2.10.4) 06/22/95  
LER ANALYSIS PROTOCOL [ 1 of 6 ]

Plant Name: <ARKANSAS 1> Docket Number<50 - 313>

Event Date <MM/DD/YY>: 05/21/91 LER Number: 91-005

Event Time: 951 Issue Date: 06/14/91

Power Level:

Personnel Category:

|                                |                         |
|--------------------------------|-------------------------|
| Licensed Operator              | Engineer                |
| Non-Licensed Operator          | Radiological Protection |
| Instrument and Control (I & C) | Chemistry               |
| Y Electrical                   | Security                |
| Mechanical                     | Other                   |

F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev.Fld F10-Exit

Figure 6-3. LER Edit Screen Page 1 of 6



FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95

LER ANALYSIS PROTOCOL [ 2 of 6 ]

Work Type:

|                                               |                       |
|-----------------------------------------------|-----------------------|
| <input checked="" type="checkbox"/> Operating | Engineering           |
| Testing                                       | Procedure Development |
| Calibration                                   | Refueling             |
| Troubleshooting                               | Modification          |
| <input type="checkbox"/> Maintenance          |                       |
| Other:                                        |                       |

Type of Task Behavior:

|                                          |                                                    |
|------------------------------------------|----------------------------------------------------|
| <input type="checkbox"/> Skill-based     | Action Error:                                      |
| <input type="checkbox"/> Rule-based      | Information Unavailable                            |
| <input type="checkbox"/> Knowledge-based | Untimely Action                                    |
|                                          | Omission                                           |
|                                          | Out of Sequence                                    |
|                                          | <input type="checkbox"/> Wrong Action (Commission) |
|                                          | Extraneous Action                                  |

F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev.Fld F10-Exit

Figure 6-4. LER Edit Screen Page 2 of 6

FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95

LER ANALYSIS PROTOCOL [ 3 of 6 ]

Contributing Factors:

|                                                             |                                                 |
|-------------------------------------------------------------|-------------------------------------------------|
| <input checked="" type="checkbox"/> Information Unavailable |                                                 |
| 1.Inadequate Training                                       | 13.Work Schedule                                |
| 2.Improper Training                                         | 14.Work Load                                    |
| 3.No Training                                               | 8.Human System Interface                        |
| 4.Procedures not Followed                                   | 9.(RESERVED)                                    |
| <input type="checkbox"/> 5.Procedures Inadequate            | <input type="checkbox"/> 15.Management/Planning |
| 6.Lack of Procedures                                        | 16.Shift Turnover                               |
| 7.Procedures Wrong                                          |                                                 |
| 11.Verbal Communications                                    |                                                 |
| 12.Written Communications                                   |                                                 |
| 10.Work Environment                                         |                                                 |

F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev.Fld F10-Exit

Figure 6-5. LER Edit Screen Page 3 of 6

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95

LER ANALYSIS PROTOCOL      [ 4 of 6 ]

Plant Identified Root Cause: ☒ If yes, please specify in memo below

[\*] [INADEQUATE PROCEDURAL GUIDANCE REGARDING THE CROSS-TIE OF ]

Is alternative root cause plausible, other than that already cited?      N

If yes, please specify?

What was the corrective action(s) taken by the plant?

[\*] [PROCEDURES FOR CROSS-TIE-ING ELECTRICAL LOAD CENTERS WERE ]

Are the corrective actions likely to prevent similar events?      Y

F1-Help    F2-Pick    F5-Copy    F6-Save    F7-Next Fld F8-Prev.Fld    F10-Exit

Figure 6-6. LER Edit Screen Page 4 of 6

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95

LER ANALYSIS PROTOCOL      [ 5 of 6 ]

Comments: (Which cognitive errors appear to contribute to event?)

☒ Information Unavailable

Attention Deficit

Misinterpretation of Information

Forgetting

☒ False Assumption About Conditions

Poor Judgment

Boredom

Other

F1-Help    F2-Pick    F5-Copy    F6-Save    F7-Next Fld F8-Prev.Fld    F10-Exit

Figure 6-7. LER Edit Screen Page 5 of 6

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      03/25/96

LER ANALYSIS PROTOCOL      [ 6 of 6 ]

Reportability Codes:

|                   |   |                  |                      |
|-------------------|---|------------------|----------------------|
| 20.402(b)         |   | 50.36(c)(1)      | 50.73(a)(2)(vii)     |
| 20.405(a)(1)(i)   |   | 50.36(c)(2)      | 50.73(a)(2)(viii)(A) |
| 20.405(a)(1)(ii)  | Y | 50.73(a)(2)(1)   | 50.73(a)(2)(viii)(B) |
| 20.405(a)(1)(iii) |   | 50.73(a)(2)(ii)  | 50.73(a)(2)(x)       |
| 20.405(a)(1)(iv)  |   | 50.73(a)(2)(iii) | 73.71(b)             |
| 20.405(a)(1)(v)   |   | 50.73(a)(2)(iv)  | 73.71(c)             |
| 20.405(c)         |   | 50.73(a)(2)(v)   |                      |

Other:

Accession Number: 9510110247

Edit LER TITLE: [ ] If yes, please specify in memo:  
 FAILURE TO ESTABLISH ALTERNATE RADIOACTIVE GASEOUS EFFLUENT  
 SAMPLING WITHIN ONE HOUR DUE TO LACK OF GUIDANCE REGARDING  
 PRIORITIZATION FOR RESTORATION OF SAMPLING CAPABILITY UPON LOSS  
 OF MULTIPLE SPING CHANNELS

F1-Help    F2-Pick    F5-Copy    F6-Save    F7-Next Fld    F8-Prev.Fld    F10-Exit

Figure 6-8. LER Edit Screen Page 6 of 6

The LER Edit screen has several interesting features. There are many fields that form groups, such as *Reportability Codes* in Figure 6-8. Each entry is a single field, with either a blank or the letter "Y" in it. Type the letter "Y" next to the *Reportability Code* you want to select; type "N" when the cursor is positioned on top of a "Y" you want to remove.

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## Chapter 7 - EOP Data Module

The Emergency Operating Procedures (EOP) Data module consists of one browse screen and one edit screen. You cannot add new EOP Data records, but you can edit existing records.

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95

SELECT PLANT FOR DATA ENTRY      1      1221

| PLANT NAME        | DOCKET | PLANT TYPE |
|-------------------|--------|------------|
| <b>ARKANSAS 1</b> | 313    | PWR        |
| ARKANSAS 2        | 368    | PWR        |
| BEAVER VALLEY 1   | 334    | PWR        |
| BEAVER VALLEY 2   | 412    | PWR        |
| BELLEFONT 1       | 438    | PWR        |
| BELLEFONT 2       | 439    | PWR        |
| BIG ROCK POINT    | 155    | BWR        |
| BRAIDWOOD 1       | 456    | PWR        |
| BRAIDWOOD 2       | 457    | PWR        |
| BROWNS FERRY 1    | 259    | BWR        |
| BROWNS FERRY 2    | 260    | BWR        |
| BROWNS FERRY 3    | 296    | BWR        |
| BRUNSWICK 1       | 325    | BWR        |
| BRUNSWICK 2       | 324    | BWR        |
| BYRON 1           | 454    | PWR        |

F1-Help/More    F3-Filter    F4-Export    F9-Sort    F10-Exit

Figure 7-1. EOP Browse Screen

Press the Enter key to edit the highlighted record. The Edit screen appears:

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95

EOP INFORMATION      [ 1 of 1 ]

Plant Name: ARKANSAS 1      Docket Number: 50 - 313

----- EOPS -----

PGP Review Date (LHFB) (MM/DD/YY): 06/19/89

PGP Final SER Date (I.C.1): 06/30/89

EOP Inspection Date: 05/31/88-06/10/88      EOP Report Number: 313/88-17

EOP Follow-up Date: / /      EOP Follow-up Report Number:

TAC Number: M42842      Status: closed

----- ADDITIONAL INSPECTION INFORMATION -----

Verification & Validation: [ ]      Writer's Guide: [ ]

System Walkdowns: [ ]      Interviews: [ ]

Simulator/Training: [ ]      Staffing: [ ]

F1-Help    F2-Pick    F5-Copy    F6-Save    F7-Next Fld    F8-Prev.Fld    F10-Exit

Figure 7-2. EOP Edit Screen

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## Chapter 8 - Training Data Module

The Training Data module consists of one Browse screen and one Edit screen with 3 pages. Each Training Data record contains 3 pages. You cannot add new Training Data records, but you can edit existing records. Move the highlight bar and press **Enter** to select a plant name. Figures 8-2 through 8-4 show the Training Data Edit screens.

Filtering can be done at this screen. Selecting **F3-Filter** will display the standard filter screen. The field names and definitions for this module are shown in Appendix A.

| FILTER->                                                 |                                            |            |
|----------------------------------------------------------|--------------------------------------------|------------|
| H F I S                                                  | HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) | 06/22/95   |
| SELECT PLANT FOR DATA ENTRY [ 119 ]                      |                                            |            |
| PLANT NAME                                               | DOCKET                                     | PLANT TYPE |
| ARKANSAS 1                                               | 313                                        | PWR        |
| ARKANSAS 2                                               | 368                                        | PWR        |
| BEAVER VALLEY 1                                          | 334                                        | PWR        |
| BEAVER VALLEY 2                                          | 412                                        | PWR        |
| BIG ROCK POINT                                           | 155                                        | BWR        |
| BRAIDWOOD 1                                              | 456                                        | PWR        |
| BRAIDWOOD 2                                              | 457                                        | PWR        |
| BROWNS FERRY 1                                           | 259                                        | BWR        |
| BROWNS FERRY 2                                           | 260                                        | BWR        |
| BROWNS FERRY 3                                           | 296                                        | BWR        |
| BRUNSWICK 1                                              | 325                                        | BWR        |
| BRUNSWICK 2                                              | 324                                        | BWR        |
| BYRON 1                                                  | 454                                        | PWR        |
| BYRON 2                                                  | 455                                        | PWR        |
| CALLAWAY 1                                               | 483                                        | PWR        |
| F1-Help/More F3-Filter F4-Export F5-Add F9-Sort F10-Exit |                                            |            |

Figure 8-1. Training Data Browse Screen

FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95  
 TRAINING INFORMATION [ 1 of 3 ]

Plant Name: ARKANSAS 1 Docket Number: 50 - 313  
 Licensee: ENERGY OPERATIONS, INC. Region: <4>

ACCREDITATION

Accreditation Date #1: 07/29/92 Was Accreditation Renewed? Y  
 Which Program(s) Were Accredited? Y N Y Q C  
 Y R I H  
 Y S E T  
 Y A Y M

Accreditation Date #2: 10/21/93 Was Accreditation Renewed? Y  
 Which Program(s) Were Accredited? N Q Y C  
 R Y I Y H  
 S Y E Y T  
 A Y M

F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev.Fld F10-Exit

Figure 8-2. Training Data Edit Screen Page 1 of 3

FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95  
 TRAINING INFORMATION [ 2 of 3 ]

Accreditation Date #3: / / Was Accreditation Renewed?  
 Which Program(s) Were Accredited? N Q C  
 R I H  
 S E T  
 A M

Accreditation Date #4: / / Was Accreditation Renewed?  
 Which Program(s) Were Accredited? N Q C  
 R I H  
 S E T  
 A M

F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev.Fld F10-Exit

Figure 8-3. Training Data Edit Screen Page 2 of 3

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95

-----TRAINING INFORMATION----- [ 3 of 3 ]-----

----- TRAINING INSPECTIONS -----

|                              |      |                |
|------------------------------|------|----------------|
| Training Inspection Date #1: | /  / | Report #:      |
|                              |      | Fiche Address: |
| Training Inspection Date #2: | /  / | Report #:      |
|                              |      | Fiche Address: |
| Training Inspection Date #3: | /  / | Report #:      |
|                              |      | Fiche Address: |

-----

Additional Information: [\*]

-----

F1-Help   F2-Pick   F5-Copy   F6-Save   F7-Next Fld F8-Prev.Fld   F10-Exit

Figure 8-4. Training Data Edit Screen Page 3 of 3

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## Chapter 9 - Inspection Reports Module

The Inspection Reports module first offers the two options shown in Figure 9-1: SALP or Inspection Reports. Selecting either option produces a Browse screen (Figure 9-2) from which you select the site. (Sites are places with one or more nuclear power plants.)

If you had chosen SALP earlier, selecting a site will produce the SALP Edit screen (Figure 9-3).

FILTER->

H F I S HUMAN FACTORS INFORMATION SYSTEM (V2.10.4) 06/22/95

SELECT ACTION

SALP

Inspection Reports

F1-Help/More F10-Exit

Figure 9-1. Inspection Reports Menu

FILTER->

| SELECT SITE FOR INSPECTION REPORT LIST |          |               |                 |               |                 |          | [ 76 ] |
|----------------------------------------|----------|---------------|-----------------|---------------|-----------------|----------|--------|
| SITE                                   | DOCKET 1 | OPS<br>RATING | MAINT<br>RATING | ENG<br>RATING | PLANT<br>RATING | DATE     |        |
| ARKANSAS                               | 313      | 0             | 0               | 0             | 0               |          |        |
| BEAVER VALLEY                          | 334      | 1             | 2               | 2             | 1               | 11/27/93 |        |
| BELLEFONTIE                            | 438      | 0             | 0               | 0             | 0               |          |        |
| BIG ROCK POINT                         | 155      | 0             | 0               | 0             | 0               |          |        |
| BRAIDWOOD                              | 456      | 1             | 1               | 2             | 2               | 02/19/94 |        |
| BROWNS FERRY                           | 259      | 0             | 0               | 0             | 0               |          |        |
| BRUNSWICK                              | 325      | 1             | 2               | 2             | 1               | 09/06/93 |        |
| BYRON                                  | 454      | 1             | 1               | 1             | 1               | 08/20/94 |        |
| CALLAWAY                               | 483      | 1             | 1               | 1             | 2               | 09/18/93 |        |
| CALVERT CLIFFS                         | 317      | 1             | 2               | 1             | 2               | 10/09/93 |        |
| CATAWBA                                | 413      | 2             | 2               | 2             | 1               | 10/02/93 |        |
| CLINTON                                | 461      | 1             | 1               | 2             | 2               | 11/27/93 |        |
| COMMANCHE PEAK                         | 445      | 2             | 2               | 1             | 1               | 06/30/94 |        |
| COOK                                   | 315      | 2             | 2               | 2             | 2               | 12/31/91 |        |
| COOPER STATION                         | 298      | 0             | 0               | 0             | 0               |          |        |

F1-Help/More F3-Filter F4-Export F5-Add F9-Sort F10-Exit

Figure 9-2. Site Browse Screen

FILTER->

---

SALP DATA FOR BEAVER VALLEY

---

| AREA          | Current |          | Previous |          | Prior  |      |
|---------------|---------|----------|----------|----------|--------|------|
|               | Rating  | Date     | Rating   | Date     | Rating | Date |
| Operations    | 1       | 11/27/93 | 1        | 06/13/92 | 0      | / /  |
| Maintenance   | 2       |          | 2        |          | 0      |      |
| Engineering   | 2       |          | 2        |          | 0      |      |
| Plant Support | 1       |          | 1        |          | 0      |      |

---

F1-Help    F2-Pick    F6-Save    F7-Next Fld    F8-Prev.Fld    F10-Exit

Figure 9-3. SALP Edit Screen

The SALP Edit screen differs from other HFIS Edit screens in some important ways. When you save your data you will be asked if you want to move the old values in the Current column into the Previous column.

- If you chose **Yes**, then the old values in the Current column are moved into the Previous column and the original values of the Previous column are moved to the Prior column. The record is then saved.
- If you say **No**, then any changes you made in any of the columns are saved with no moving.

Notice that if you choose **Yes**, then any changes you make in Previous and Prior columns are lost.



| AREA          | Current<br>Rating | Date | Previous<br>Rating                                                                                                                       | Date | Prior<br>Rating | Date |
|---------------|-------------------|------|------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|------|
| Operations    | 2                 | /    | <div style="border: 1px solid black; padding: 5px; text-align: center;">           &gt;&gt;&gt;&gt; WAIT &lt;&lt;&lt;&lt;         </div> |      | /               | /    |
| Maintenance   | 0                 |      |                                                                                                                                          |      |                 |      |
| Engineering   | 0                 |      |                                                                                                                                          |      |                 |      |
| Plant Support | 0                 |      |                                                                                                                                          |      |                 |      |

Move the old Current ratings to Previous rating column?

Yes
No

F1-Help/More
F10-Exit

Figure 9-4. SALP Save Record Screen

If you had chosen inspection reports from the first Inspection Reports screen, when you press **Enter** from the Site Browse screen another Browse screen appears, listing the inspection reports starting with the site you highlighted. You can scroll back and forth among all inspection reports at this time, or use a filter (**F3**) to limit the number of Inspection Reports you want to view. If you go back to the Site Browse screen, the filter you set will be discarded, but you can re-execute the filter by typing **F3-Filter** and then **F9-Exec**.

FILTER->

SELECT SITE FOR INSPECTION REPORT EDIT
[ 3,052 ]

| SITE     | DOCKET 1 | REPORT # | DEPARTMENT    |
|----------|----------|----------|---------------|
| ARKANSAS | 368      | 94-004   | H CONTRACTOR  |
| ARKANSAS | 368      | 94-012   | A OPERATIONS  |
| ARKANSAS | 368      | 94-012   | A OPERATIONS  |
| ARKANSAS | 313      | 94-015   | H CONTRACTOR  |
| ARKANSAS | 368      | 94-015   | H CONTRACTOR  |
| ARKANSAS | 313      | 94-012   | A OPERATIONS  |
| ARKANSAS | 368      | 94-017   | G ENGINEERING |
| ARKANSAS | 313      | 94-017   | E CHEMISTRY   |
| ARKANSAS | 313      | 94-017   | G ENGINEERING |
| ARKANSAS | 313      | 94-006   | G ENGINEERING |
| ARKANSAS | 313      | 94-006   | H CONTRACTOR  |
| ARKANSAS | 313      | 94-007   | A OPERATIONS  |
| ARKANSAS | 313      | 94-007   | A OPERATIONS  |
| ARKANSAS | 313      | 94-007   | G ENGINEERING |
| ARKANSAS | 313      | 94-007   | D MECHANICAL  |
| ARKANSAS | 313      | 94-008   | D MECHANICAL  |

F1-Help/More
F3-Filter
F4-Export
F5-Add
F9-Sort
F10-Exit

Figure 9-5. Inspection Report Record Browse Screen

Press **Enter** to edit the selected inspection report. The Edit screen appears. To add a new record, select **F-5-Add**. A blank record will appear. Use **F2-Pick** to fill in the fields: *Site*, *Docket*, *Department*, *Category*, *Area*, *Details*, & *Violation*. Use **F2-Pick** rather than typing in a value. Because the choices for *Details* depend on the choice for *Area*, which depends on *Category*, when you make a change in *Category* or *Area*, the subordinate fields are cleared. Type in the value for the *Doc.Date* field using a MM/DD/YY format. The cursor must be on the site field before the record can be saved.

```

FILTER->

===== HFIS INSPECTION REPORT INSERT/EDIT =====[ 1 of 1]=====
Site: <BEAVER VALLEY>
Docket 1 <334>      Report 1: 93-022
Docket 2 <412>      Report 2: 93-023
Docket 3 <  >      Report 3:  - 0

Department <A  OPERATIONS          >
  Category <B  PROCEDURES           >
    Area <J   SPECIAL               >
      Details <07 FAILURE TO FOLLOW PROCEDURE           >
  Violation <NC NOT CITED>      Doc.Date <11/02/93>

F1-Help  F2-Pick  F5-Copy  F6-Save  F7-Next Fld F8-Prev.Fld F10-Exit
  
```

Figure 9-6. Inspection Report Edit Screen

To copy a record press **F5-Copy**. A dialog box with the *Site* field will appear. Use **F2** to select the site name you want to copy the selected record to, and press **Enter**. The copied record is now in the Insert/Edit Screen and can be edited and/or saved.

## Chapter 10 - HPIP Module

The HPIP module first displays a Plant Browse screen showing all plants.

| FILTER->                                                              |        |            |
|-----------------------------------------------------------------------|--------|------------|
| H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      06/22/95 |        |            |
| SELECT PLANT FOR HPIP LIST      [ 121 ]                               |        |            |
| PLANT NAME                                                            | DOCKET | PLANT TYPE |
| ARKANSAS 1                                                            | 313    | PWR        |
| ARKANSAS 2                                                            | 368    | PWR        |
| BEAVER VALLEY 1                                                       | 334    | PWR        |
| BEAVER VALLEY 2                                                       | 412    | PWR        |
| BELLEFONTE 1                                                          | 438    | PWR        |
| BELLEFONTE 2                                                          | 439    | PWR        |
| BIG ROCK POINT                                                        | 155    | BWR        |
| BRAIDWOOD 1                                                           | 456    | PWR        |
| BRAIDWOOD 2                                                           | 457    | PWR        |
| BROWNS FERRY 1                                                        | 259    | BWR        |
| BROWNS FERRY 2                                                        | 260    | BWR        |
| BROWNS FERRY 3                                                        | 296    | BWR        |
| BRUNSWICK 1                                                           | 325    | BWR        |
| BRUNSWICK 2                                                           | 324    | BWR        |
| BYRON 1                                                               | 454    | PWR        |
| F1-Help/More   F3-Filter   F4-Export   F5-Add   F9-Sort   F10-Exit    |        |            |

Figure 10-1. HPIP Plant Browse Screen

When you press **Enter** from the Plant Browse screen you see another Browse screen, listing the HPIP records starting close to the plant you highlighted. You can scroll back and forth among all HPIP records at this time, or use a filter (**F3**) to limit the number of HPIP records you want to look at. If you go back to the HPIP Plant Browse screen, the filter you set will be discarded, but you can re-execute the filter by typing **F3-Filter**, then **F9-Exec**.

FILTER->

| SELECT RECORD FOR HPIP EDIT/INSERT |        |            |             | [ 13 ] |
|------------------------------------|--------|------------|-------------|--------|
| PLANT NAME                         | DOCKET | EVENT DATE | POWER LEVEL |        |
| LIMERICK 1                         | 352    | 02/06/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/06/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/06/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/12/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/12/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/12/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/12/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/12/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/12/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/16/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/24/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/24/94   | SHD         |        |
| LIMERICK 1                         | 352    | 02/24/94   | SHD         |        |

F1-Help/More F3-Filter F4-Export F5-Add F9-Sort F10-Exit

Figure 10-2. HPIP Record Browse Screen

Press **Enter** to edit the selected HPIP record. The Edit screen appears. *Personnel Code* and *Activity Type* are multi-select fields. They and *Root Cause* have special **F2** pick lists to help you quickly select the value you want.

To type in a value directly, type the letters and numbers of the code you want, but do not type the periods that display between them. You cannot type in more than one code in a field. If you want to make multiple selections, use the **F2-Pick**. You may select a maximum of three values in the *Personnel Code* field.

The *Comment field* is not a Memo field—you are limited to about 200 characters of data.

FILTER->

| HPIP INSERT/EDIT                                                |               | [ 1 of 1 ] |
|-----------------------------------------------------------------|---------------|------------|
| Plant: <LIMERICK 1>                                             | Docket: <352> |            |
| Event Date: 02/06/94                                            |               |            |
| Power Level: <SHD>                                              |               |            |
| Personnel Code: <P.2.D.P.3.B.P.3.C>                             |               |            |
| Activity Type: <A.6 MAINTENANCE>                                |               |            |
| Root Cause:                                                     |               |            |
| Comment: <R.4.E.1 EMPLOYEE COMMUNICATION LIA                    |               |            |
| INATTENTION TO DETAIL. ENTIRE CONTROL ROOM STAFF INVOLVED       |               |            |
| INCLUDING I&C TECH. PECO POLICYFOR SELF-CHECKING NOT ADEQUATELY |               |            |
| COMMUNICATED TO THE INDIVIDUAL. SEE INSPECTION REPORT 94-09 AND |               |            |
| INSPECTION REPORT ENTRY                                         |               |            |

F1-Help F2-Pick F5-Copy E6-Save F7-Next Fld F8-Prev.Fld F10-Exit

Figure 10-3. HPIP Edit Screen

## Chapter 11 - Reports Module

The Reports module is different in that it does not have Browse and Edit screens. It presents a list of pre-defined reports that collect data from other modules in HFIS, format the data, and send the data to a printer, a file, or to the screen. An example copy of each report is in Appendix H.

| REPORTS MENU                       |         |
|------------------------------------|---------|
| General Plant Information          | HFIS- 0 |
| Regulatory Information             | HFIS- 1 |
| LER Information Overview           | HFIS- 3 |
| DCRDR/SPDS Implementation Status   | HFIS- 4 |
| LER Root Cause Summary             | HFIS- 5 |
| Inspection Module Summary Report   | HFIS- 6 |
| Preventive Measures LER's          | HFIS- 7 |
| Training Accreditation Status      | HFIS- 8 |
| Human Performance LER Summary      | HFIS- 9 |
| Report 7 For Each and Every Site   | HFIS-10 |
| Report 10 For Each and Every Plant | HFIS-11 |

F1-Help/More F10-Exit

Figure 11-1. Reports Menu

Press **Enter** to execute the selected report. A small screen like an Edit screen appears:

Enter Information For Report

Select Destination Currently:< >

Enter Docket Number For Plant To Be Included In Report  
(Leave Docket Number Blank For All Dockets)  
< >

Number Of Copies: [ 1 ]

[Esc]:Exit

Figure 11-2. Report Information Screen



There are three fields. You must fill in all three and press **Enter** to actually print the report. If you set the destination to File, you will see another small screen with three editable fields:

```
HFIS HUMAN FACTORS INFORMATION SYSTEM (V2.0) 09/20/94

PARAMETERS FOR REPORT OUTPUT FILE:
Enter File Name (Drive:\directory\filename)
Select Printer Codes Type (1=Laser, 2=Epson, 0=ASCII)
Append To Existing File (Y/N)

F1-Help/More F2-Look Up F10-Exit
```

**Figure 11-3. Report Output File Screen**

HFIS supports HP Laserjet-compatible and Epson printers. It does not support Postscript printers. Printers must be attached to LPT2.

Report HFIS-1 "General Plant Information", contains the following information for each plant in the "Plant List"; plant name, docket number, type (PWR/BWR), NSSS vendor, date of commercial operation, utility, NRC region, and the city and state where the plant is located. The input screen is shown in Figure 11-2.

Report HFIS-3 "Regulatory Information" summarizes the information contained in the Regulatory Programs module for the selected dockets. A blank entry will generate the report for all dockets. The input screen is shown in Figure 11-2.

Report HFIS-4 "Ler Information Overview" contains information concerning the *personnel category, work type, and type of task behavior* from the LER Data module for a selected docket and LER number or date range.



```

H P I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)   09/30/95

=====Enter Information For Report=====
Select Destination Currently:<          >

Enter Docket Number For Plant To Be Included In Report
Docket <  >  Enter LER number <  > OR
Events after <          > Events before <          >

Number Of Copies: [  ]

=====[Esc]:Exit=====

```

**Figure 11-4. Report HFIS-04 Input Screen**

Report HFIS-5 "DCRDR/SPDS Implementation Status" summarizes the information contained in the Regulatory Programs module for all dockets

Report HFIS-6 "LER Plant Root Cause" displays the *plant name, docket number, LER number, Event Date, Event time, Power level, and Root cause* for the selected docket's LERs. You may choose any one docket, or a blank generates the report for all dockets. The input screen is shown in Figure 11-2.

Report HFIS-7 "Inspection Module Summary Report", summarizes the information from the Inspection Reports module. You must select a site name for the report. A blank will generate the report for all sites. You may also specify a date range for the report.

```

=====Enter Information For Report=====
Select Destination Currently:<          >

Enter Site Name For This Report
  <Leave Blank For All Sites><          >
  Dates after  <          > Dates before  <          >

Number Of Copies: [ ]

=====[Esc]:Exit=====

```

**Figure 11-5. Report HFIS-07 Input Screen**

Report HFIS-8 "Preventive Measures LER's" displays the *plant name, docket number, LER number, event date, event time, LER issue date, and power level*. You may choose one docket, or a blank generates the report for all dockets. The input screen is shown in Figure 11-2.

Report HFIS-9 "Training Accreditation Status" summarizes the status each plants training program. It displays the *region, Licensee, Plant name, date of Accrediatiaiton and renewal*.

Report HFIS-10 "LER Summary Statistics" summarizes all the LERs for a particular docket number. You may also specficy a date range for this report. If you leave the date range blank you will get all the the LERs for the selected docket. See figure 11-6.

```
H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)  09/30/95

Enter Information For Report
Select Destination Currently:<          >

Enter Docket Number For Plant To Be Included In Report
<Leave Blank For All Dockets> <          >
Events after <          > Events before <          >

Number Of Copies: [ ]

[Esc]:Exit
```

Figure 11-6. Report HFIS-10 Input Screen

Report HFIS-11, runs Report HFIS-07 for all 76 Sites in the database. You can select a date range for this report. **Note: This report can take an hour or more to run.**

Report HFIS-12, run Report HFIS-10 for all 121 plants in the database. You can select a date range for this report. **Note: This report can take an hour or more to run.**

## Chapter 12 - Utilites Module

The Utilities module is a catch-all for several important functions. The initial menu, shown in Figure 12-1, presents two choices.

```
H F I S      HUMAN FACTORS INFORMATION SYSTEM <V2.0>      09/19/94

UTILITIES
View Plant Identification
System Maintenance

F1-Help/More      F10-Exit
```

Figure 12-1. Utilities Main Menu

### 12.1 View Plant Identification

This feature lets you edit the plant information database used in the Browse screens of many other modules. The first screen is a Browse screen.

```
View Plant Identification
FILTER->No Filter Active

H F I S      HUMAN FACTORS INFORMATION SYSTEM <V2.0>      09/19/94
SELECT PLANT TO VIEW/EDIT      [ 122 ]

PLANT NAME      DOCKET      PLANT
TYPE

ARKANSAS 1      313      PWR
ARKANSAS 2      368      PWR
BEAVER VALLEY 1  334      PWR
BEAVER VALLEY 2  412      PWR
BELLEFONTE 1    438      PWR
BELLEFONTE 2    439      PWR
BIG ROCK POINT  155      BWR
BRAIDWOOD 1     456      PWR
BRAIDWOOD 2     457      PWR
BROWNS FERRY 1  259      BWR
BROWNS FERRY 2  260      BWR
BROWNS FERRY 3  296      BWR
BRUNSWICK 1     325      BWR
BRUNSWICK 2     324      BWR
BYRON 1         454      PWR

F1-Help/More  F3-Filter  F4-Export  F5-Add  F9-Sort  F10-Exit
```

Figure 12-2. View Plant Identification Browse Screen

You may edit a record only after entering a password in the System Maintenance section of the Utilities module during the current session. After entering the password you return to View Plant Identification. By pressing **Enter** you can edit the selected record.

The Edit screen for Plant Identification is similar to all other Edit screens.

| View Plant Identification                                        |                | (UNMODIFIED)                                     |
|------------------------------------------------------------------|----------------|--------------------------------------------------|
| FILTER->No Filter Active                                         | H F I S        | HUMAN FACTORS INFORMATION SYSTEM (U2.0) 09/19/94 |
| EDIT PLANT INFORMATION                                           |                | [ 1 of 1 ]                                       |
| HUMAN FACTORS INFORMATION SYSTEM<br>GENERAL PLANT INFORMATION    |                |                                                  |
| PLANT NAME <ARKANSAS 1> LOCATION RUSSELLVILLE, AR                |                |                                                  |
| UTILITY ARKANSAS POWER & LIGHT CO.                               |                | REGION <4 >                                      |
| DOCKET <50- 313>                                                 | PLANT TYPE PWR | VENDOR <BW >                                     |
| DATE OF OPERATION 12/01/74                                       |                |                                                  |
| MEMO: [ ]                                                        |                |                                                  |
| F1-Help F2-Pick F5-Copy F6-Save F7-Next Fld F8-Prev.Fld F10-Exit |                |                                                  |

Figure 12-3. View Plant Identification Edit Screen

## 12.2 System Maintenance

If you choose System Maintenance you are prompted for the system password. If you have already given the system password during this session, you are not asked again.

| UTILITY PASSWORD      |                                          |
|-----------------------|------------------------------------------|
| View<br>Syste         | Please Enter The Password:<br>[REDACTED] |
| F1-Help/More F10-Exit |                                          |

Figure 12-4. Utility Password Screen



**CAUTION:** The functions you can perform are shown in a menu. **BEFORE CHOOSING OR EXECUTING ANY OF THESE FUNCTIONS, MAKE SURE THE HFIS DIRECTORY IS BACKED UP.**

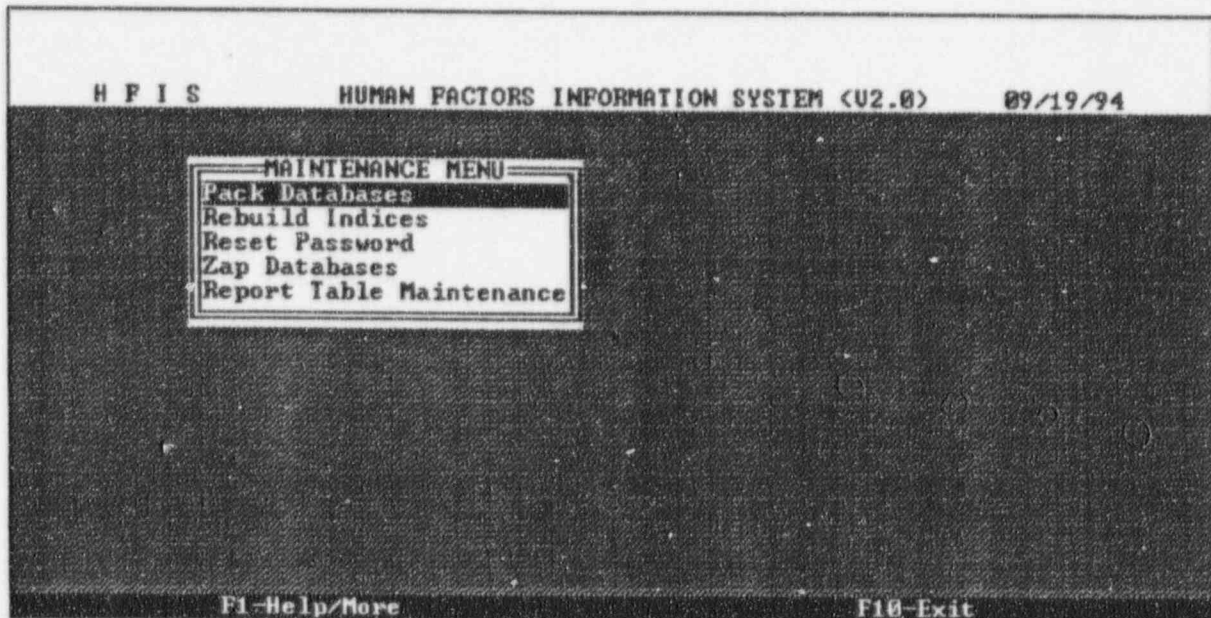


Figure 12-5. Maintenance Menu

Pack Databases, Zap Databases, and Rebuild Indices present a multiple-select screen listing all HFIS Databases. You select the databases you want to perform the operation on and confirm that you want to proceed.

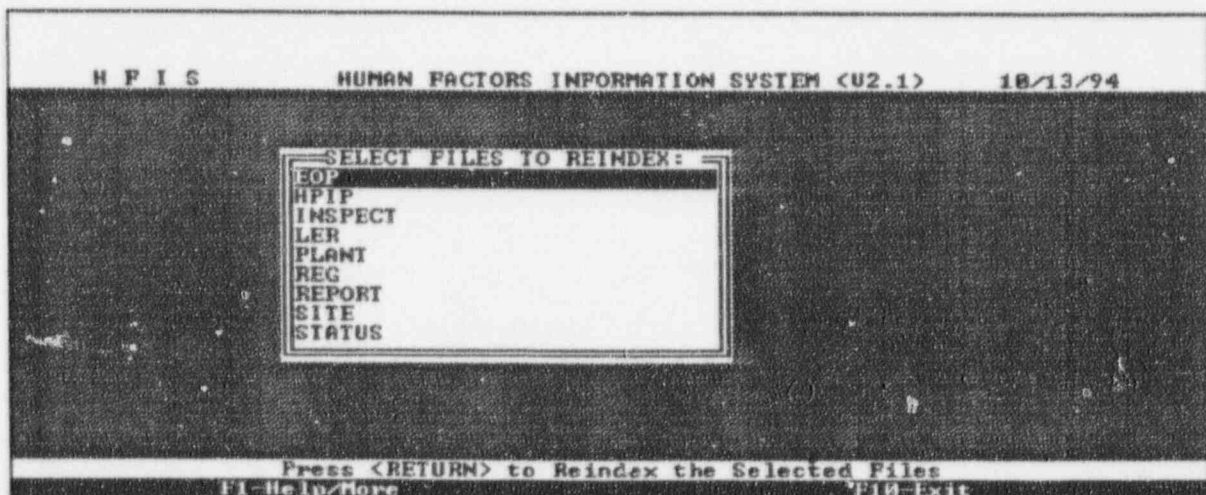


Figure 12-6. Reindex Files Screen

Pack Databases removes all records deleted from the selected databases since the last time you chose Pack Databases. Rebuild Indices rebuilds index files and should be used any time a new database is delivered and installed. Always select all databases when you use Rebuild Indices. Reset Password prompts you for a new system password. Do not forget the new password. Zap Databases completely clears the databases you selected. **THIS IS DANGEROUS.** Report Table Maintenance presents the list of reports from the Reports module.

FILTER->

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.10.4)      08/06/95  
[ 12 ]

| LIST OF REPORTS                  |               |
|----------------------------------|---------------|
| REPORT NAME                      | REPORT NUMBER |
| General Plant Information        | 1             |
| Plant Status Information         | 2             |
| Regulatory Information           | 3             |
| LER Information Overview         | 4             |
| DCRDR/SPDS Implementation Status | 5             |
| LER Root Cause Summary           | 6             |
| Inspection Module Summary Report | 7             |
| Preventive Measures LER's        | 8             |

F1-Help/More      F3-Filter      F9-Sort      F10-Exit

Figure 12-7. Report Table Maintenance Screen

Press Enter to edit the underlying data. HFIS uses a tool called Report Writer to actually generate and print reports. See the Report Writer User's Guide for more details about Report Writer.

FILTER->No Filter Active      Report Table Maintenance      (UNMODIFIED)

H F I S      HUMAN FACTORS INFORMATION SYSTEM (V2.0)      09/19/94  
REPORTS MAINTENANCE TOOL      [ 1 of 1 ]

REPORT TITLE: General Plant Information

REPORT NUMBER: 1

REPORT DISPLAY ORDER: 1

R&R LIBRARY: HFIS.RP1

REPORT NAME IN LIBRARY: HFIS-01-H

MASTER DATA BASE: PLANT

MASTER INDEX: PLANT1.C

FONT INFORMATION FILE:

QUERY FOR REPORT: PLANT->DOCKET='155'

SCOPE OF REPORT FROM INDEX

LOW:

HIGH:

F1-Help      F2-Pick      F5-Copy      F6-Save      F7-Next Fld      F8-Prev.Fld      F10-Exit

Figure 12-8. Report Table Maintenance Edit Screen

## **APPENDIX A**

### **FILTER FIELD PICK LIST TABLES**



## Appendix A - Filter Field Pick List Tables

### A.1 Regulatory Programs

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME                         |
|------------|------------|------------------------------------------|
| DOCKET     | Character  | Document Number                          |
| PLANTNAME  | Character  | Plant Name                               |
| PLANT_IMPL | Logical    | DCRDR Fully Implemented                  |
| DCRDR_IMPL | Date       | DCRDR Implementation Date                |
| SUMMARY3   | Date       | Final DCRDR Summary Report Date          |
| AUDIT      | Date       | Audit Date                               |
| TER1       | Date       | 1st TER Date                             |
| TER2       | Date       | 2nd TER Date                             |
| SER1       | Date       | 1st SER Date                             |
| SER2       | Date       | 2nd SER Date                             |
| SGTR_REVW  | Character  | SGTR Operator Action Times Review Needed |
| SGTR_SER   | Date       | SER Completion Date                      |
| FINAL_SER  | Date       | Final SER Date                           |
| SPDS_CERT  | Date       | SPDS Certification Date                  |
| SPDS_IMPL  | Date       | SPDS Implementation Date                 |
| SPDS_FINAL | Logical    | SPDS Fully Implemented                   |
| COMMENTS   | Memo       | SPDS Comments                            |
| CHG_DATE   | Date       | NOT AVAILABLE                            |
| CHG_USER   | Character  | NOT AVAILABLE                            |

## A.2 LER Data

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME                               |
|------------|------------|------------------------------------------------|
| PLANTNAME  | Character  | Plant Name                                     |
| DOCKET     | Character  | Docket Number                                  |
| EV DATE    | Date       | Event Date                                     |
| ISSUE DATE | Date       | Issue Date                                     |
| LER NUM    | Character  | LER Number                                     |
| MICRO FISH | Character  | Micro Fiche #                                  |
| PWR LEVEL  | Character  | Power Level                                    |
| POWER      | Numeric    | NOT AVAILABLE                                  |
| PERSON 1   | Character  | Personnel Category - Licensed Operator         |
| PERSON 2   | Character  | Personnel Category - Non-licensed Operator     |
| PERSON 3   | Character  | Personnel Category - Instrument and Control    |
| PERSON 4   | Character  | Personnel Category - Electrical                |
| PERSON 5   | Character  | Personnel Category - Mechanical                |
| PERSON 6   | Character  | Personnel Category - Engineer                  |
| PERSON 7   | Character  | Personnel Category - Radiological Protection   |
| PERSON 8   | Character  | Personnel Category - Chemistry                 |
| PERSON 9   | Character  | Personnel Category - Security                  |
| PERS 10 YN | Character  | Personnel Category - Other                     |
| PERSON 10  | Character  | Personnel Category - Other (specify)           |
| WORKTYPE1  | Character  | Work Type - Operating                          |
| WORKTYPE2  | Character  | Work Type - Testing                            |
| WORKTYPE3  | Character  | Work Type - Calibration                        |
| WORKTYPE4  | Character  | Work Type - Troubleshooting                    |
| WORKTYPE5  | Character  | Work Type - Maintenance                        |
| WORKTYPE6  | Character  | Work Type - Engineering                        |
| WORKTYPE7  | Character  | Work Type - Procedure Development              |
| WORKTYPE8  | Character  | Work Type - Refueling                          |
| WORKTYPE9  | Character  | Work Type - Modification                       |
| WORK 10 YN | Character  | Work Type - Other                              |
| WORKTYPE10 | Character  | Work Type - Other (specify)                    |
| BEH TYPE1  | Character  | Type of Task Behavior - Skill-based            |
| BEH TYPE2  | Character  | Type of Task Behavior - Rule-based             |
| BEH TYPE3  | Character  | Type of Task Behavior - Knowledge-based        |
| ACT UNAV   | Character  | Action Error - Info Unavailable                |
| ACT_ERR1   | Character  | Action Error - Untimely Action                 |
| ACT_ERR2   | Character  | Action Error - Omission                        |
| ACT_ERR3   | Character  | Action Error - Out of Sequence                 |
| ACT_ERR4   | Character  | Action Error - Wrong Action (Commission)       |
| ACT_ERR5   | Character  | Action Error - Extraneous Action               |
| FACT UNAV  | Character  | Contributing Factors - Info Unavailable        |
| FACTORS1   | Character  | Contributing Factors - Inadequate Training     |
| FACTORS2   | Character  | Contributing Factors - Improper Training       |
| FACTORS3   | Character  | Contributing Factors - No Training             |
| FACTORS4   | Character  | Contributing Factors - Procedures not Followed |
| FACTORS5   | Character  | Contributing Factors - Procedures inadequate   |
| FACTORS6   | Character  | Contributing Factors - Lack of Procedures      |
| FACTORS7   | Character  | Contributing Factors - Procedures Wrong        |
| FACTORS8   | Character  | Contributing Factors - Human System Interface  |

## A.2 LER Data

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME                             |
|------------|------------|----------------------------------------------|
| FACTORS9   | Character  | Contributing Factors - Reserved              |
| FACTORS10  | Character  | Contributing Factors - Work Environment      |
| FACTORS11  | Character  | Contributing Factors - Verbal Communication  |
| FACTORS12  | Character  | Contributing Factors - Written Communication |
| FACTORS13  | Character  | Contributing Factors - Work Schedule         |
| FACTORS14  | Character  | Contributing Factors - Work Load             |
| FACTORS15  | Character  | Contributing Factors - Management/Planning   |
| FACTORS16  | Character  | Contributing Factors - Shift Turnover        |
| RC ID      | Character  | Plant Identified Root Cause                  |
| RT CAUSE   | Memo       | Root Cause Comment                           |
| TRUE CAUSE | Character  | Alternative Root Cause Plausible             |
| TRUE ROOT  | Character  | Alternative Root Cause - Specify             |
| CORR ACT   | Memo       | Corrective Action Taken                      |
| RECURRENCE | Character  | Corrective Action Prevent Recurrence         |
| EFFECT1    | Character  | NOT AVAILABLE                                |
| EFFECT2    | Character  | NOT AVAILABLE                                |
| COMM UNAV  | Character  | Comments - Info Unavailable                  |
| COMMENTS1  | Character  | Comments - Attention Deficit                 |
| COMMENTS2  | Character  | Comments - Misinterpretation of Info         |
| COMMENTS3  | Character  | Comments - Forgetting                        |
| COMMENTS4  | Character  | Comments - False Assumption about Conditions |
| COMMENTS5  | Character  | Comments - Poor Judgment                     |
| COMMENTS6  | Character  | Comments - Boredom                           |
| COMM 7 YN  | Character  | Comments - Other                             |
| COMMENTS7  | Character  | Comments - Other (specify)                   |
| BRANCH     | Character  | NOT AVAILABLE                                |
| SCSSRC1    | Character  | Reportability Codes - 20.402(b)              |
| SCSSRC2    | Character  | Reportability Codes - 20.405(a)(1)(i)        |
| SCSSRC3    | Character  | Reportability Codes - 20.405(a)(1)(ii)       |
| SCSSRC4    | Character  | Reportability Codes - 20.405(a)(1)(iii)      |
| SCSSRC5    | Character  | Reportability Codes - 20.405(a)(1)(iv)       |
| SCSSRC6    | Character  | Reportability Codes - 20.405(a)(1)(v)        |
| SCSSRC7    | Character  | Reportability Codes - 20.405(c)              |
| SCSSRC8    | Character  | Reportability Codes - 50.36(c)(1)            |
| SCSSRC9    | Character  | Reportability Codes - 50.36(c)(2)            |
| SCSSRC10   | Character  | Reportability Codes - 50.36(c)(2)(i)         |
| SCSSRC11   | Character  | Reportability Codes - 50.36(c)(2)(ii)        |
| SCSSRC12   | Character  | Reportability Codes - 50.36(c)(2)(iii)       |
| SCSSRC13   | Character  | Reportability Codes - 50.36(c)(2)(iv)        |
| SCSSRC14   | Character  | Reportability Codes - 50.36(c)(2)(v)         |
| SCSSRC15   | Character  | Reportability Codes - 50.73(a)(2)(vii)       |
| SCSSRC16   | Character  | Reportability Codes - 50.73(a)(2)(viii)(A)   |
| SCSSRC17   | Character  | Reportability Codes - 50.73(a)(2)(viii)(B)   |
| SCSSRC18   | Character  | Reportability Codes - 50.73(a)(2)(x)         |
| SCSSRC19   | Character  | Reportability Codes - 73.71(b)               |
| SCSSRC20   | Character  | Reportability Codes - 73.71(c)               |
| RC 21 YN   | Character  | Reportability Codes - Other                  |
| SCSSRC21   | Character  | Reportability Codes - Other (specify)        |

## A.2 LER Data

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME |
|------------|------------|------------------|
| CHG DATE   | Date       | NOT AVAILABLE    |
| CHG USER   | Character  | NOT AVAILABLE    |
| ACCESSNUM  | Character  | Accession Number |
| LERTITEMO  | Memo       | Title of the LER |

### A.3 EOP Data

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME                                              |
|------------|------------|---------------------------------------------------------------|
| PLANTNAME  | Character  | Plant Name                                                    |
| DOCKET     | Character  | Document Number                                               |
| PGPREV_DT  | Date       | PGP Review Date                                               |
| PGPFSE DT  | Date       | PGP Final SER Date                                            |
| EOPINSP_DT | Character  | EOP Inspection Date                                           |
| EOP_RPTNO  | Character  | EOP Report Number                                             |
| EOP_FUP_DT | Date       | EOP Follow-up Date                                            |
| EOP_FUP_RP | Character  | EOP Follow-up Report Number                                   |
| V AND V    | Memo       | Additional Inspection Information - Verification & Validation |
| SYS_WLK_DN | Memo       | Additional Inspection Information - System Walkdowns          |
| SIM_TRAIN  | Memo       | Additional Inspection Information - Simulator/Training        |
| WRITERS_GD | Memo       | Additional Inspection Information - Writer's Guide            |
| INTERVIEWS | Memo       | Additional Inspection Information - Interviews                |
| STAFFING   | Memo       | Additional Inspection Information - Staffing                  |
| TACNO      | Character  | TAC Number                                                    |
| STATUS     | Character  | Status                                                        |
| CHG DATE   | Date       | NOT AVAILABLE                                                 |



## A.4 Training Data

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME             |
|------------|------------|------------------------------|
| PLANTNAME  | Character  | Plant Name                   |
| DOCKET     | Character  | Docket Number                |
| LICENSEE   | Character  | Licensee                     |
| REGION     | Character  | Region                       |
| ACCR1 DT   | Date       | Accreditation - Date #1      |
| ACCR1 REN  | Character  | Accreditation - Renewed      |
| ACCR1 N    | Character  | Accreditation - Programs - N |
| ACCR1 R    | Character  | Accreditation - Programs - R |
| ACCR1 S    | Character  | Accreditation - Programs - S |
| ACCR1 A    | Character  | Accreditation - Programs - A |
| ACCR1 Q    | Character  | Accreditation - Programs - Q |
| ACCR1 I    | Character  | Accreditation - Programs - I |
| ACCR1 E    | Character  | Accreditation - Programs - E |
| ACCR1 M    | Character  | Accreditation - Programs - M |
| ACCR1 C    | Character  | Accreditation - Programs - C |
| ACCR1 H    | Character  | Accreditation - Programs - H |
| ACCR1 T    | Character  | Accreditation - Programs - T |
| ACCR2 DT   | Date       | Accreditation - Date #2      |
| ACCR2 REN  | Character  | Accreditation - Renewed      |
| ACCR2 N    | Character  | Accreditation - Programs - N |
| ACCR2 R    | Character  | Accreditation - Programs - R |
| ACCR2 S    | Character  | Accreditation - Programs - S |
| ACCR2 A    | Character  | Accreditation - Programs - A |
| ACCR2 Q    | Character  | Accreditation - Programs - Q |
| ACCR2 I    | Character  | Accreditation - Programs - I |
| ACCR2 E    | Character  | Accreditation - Programs - E |
| ACCR2 M    | Character  | Accreditation - Programs - M |
| ACCR2 C    | Character  | Accreditation - Programs - C |
| ACCR2 H    | Character  | Accreditation - Programs - H |
| ACCR2 T    | Character  | Accreditation - Programs - T |
| ACCR3 DT   | Date       | Accreditation - Date #3      |
| ACCR3 REN  | Character  | Accreditation - Renewed      |
| ACCR3 N    | Character  | Accreditation - Programs - N |
| ACCR3 R    | Character  | Accreditation - Programs - R |
| ACCR3 S    | Character  | Accreditation - Programs - S |
| ACCR3 A    | Character  | Accreditation - Programs - A |
| ACCR3 Q    | Character  | Accreditation - Programs - Q |
| ACCR3 I    | Character  | Accreditation - Programs - I |
| ACCR3 E    | Character  | Accreditation - Programs - E |
| ACCR3 M    | Character  | Accreditation - Programs - M |
| ACCR3 C    | Character  | Accreditation - Programs - C |
| ACCR3 H    | Character  | Accreditation - Programs - H |
| ACCR3 T    | Character  | Accreditation - Programs - T |
| ACCR4 DT   | Date       | Accreditation - Date #4      |
| ACCR4 REN  | Character  | Accreditation - Renewed      |
| ACCR4 N    | Character  | Accreditation - Programs - N |
| ACCR4 R    | Character  | Accreditation - Programs - R |
| ACCR4 S    | Character  | Accreditation - Programs - S |

#### A.4 Training Data

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME                              |
|------------|------------|-----------------------------------------------|
| ACCR4_A    | Character  | Accreditation - Programs - A                  |
| ACCR4_Q    | Character  | Accreditation - Programs - Q                  |
| ACCR4_I    | Character  | Accreditation - Programs - I                  |
| ACCR4_E    | Character  | Accreditation - Programs - E                  |
| ACCR4_M    | Character  | Accreditation - Programs - M                  |
| ACCR4_C    | Character  | Accreditation - Programs - C                  |
| ACCR4_H    | Character  | Accreditation - Programs - H                  |
| ACCR4_T    | Character  | Accreditation - Programs - T                  |
| TRINSP_DT1 | Date       | Training Inspections - Date #1                |
| RPT1       | Character  | Training Inspections - #1 - Report #          |
| FICHE1     | Character  | Training Inspections - #1 - Fiche Address     |
| TRINSP_DT2 | Date       | Training Inspections - Date #2                |
| RPT2       | Character  | Training Inspections - #2 - Report #          |
| FICHE2     | Character  | Training Inspections - #2 - Fiche Address     |
| TRINSP_DT3 | Date       | Training Inspections - Date #3                |
| RPT3       | Character  | Training Inspections - #3 - Report #          |
| FICHE3     | Character  | Training Inspections - #3 - Fiche Address     |
| ADD_INFO   | Memo       | Training Inspections - Additional Information |
| CHG_DATE   | Date       | NOT AVAILABLE                                 |
| CHG_USER   | Character  | NOT AVAILABLE                                 |



## A.5 Inspection Reports

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME |
|------------|------------|------------------|
| SITE       | Character  | Site             |
| DOCKET 1   | Character  | Docket 1         |
| REPORT 1   | Numeric    | Report 1         |
| DOCKET 2   | Character  | Docket 2         |
| REPORT 2   | Numeric    | Report 2         |
| DOCKET 3   | Character  | Docket 3         |
| REPORT 3   | Numeric    | Report 3         |
| DEPARTMENT | Character  | Department       |
| CATEGORY   | Character  | Category         |
| AREA       | Character  | Area             |
| DETAILS    | Character  | Details          |
| VIOLATION  | Character  | Violation        |

## A.6 Inspection Reports (SALP)

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME                |
|------------|------------|---------------------------------|
| SITE       | Character  | NOT AVAILABLE                   |
| DOCKET 1   | Character  | NOT AVAILABLE                   |
| DOCKET 2   | Character  | NOT AVAILABLE                   |
| DOCKET 3   | Character  | NOT AVAILABLE                   |
| OPS_CURR   | Numeric    | Operations - Current Rating     |
| DATE_CURR  | Date       | Operations - Current Date       |
| OPS_LAST   | Numeric    | Operations - Prior Rating       |
| DATE_LAST  | Date       | Operations - Prior Date         |
| OPS_PREV   | Numeric    | Operations - Previous Rating    |
| DATE_PREV  | Date       | Operations - Previous Date      |
| MAINT_CURR | Numeric    | Maintenance - Current Rating    |
| MAINT_LAST | Numeric    | Maintenance - Previous Rating   |
| MAINT_PREV | Numeric    | Maintenance - Prior Rating      |
| ENG_CURR   | Numeric    | Engineering - Current Rating    |
| ENG_LAST   | Numeric    | Engineering - Previous Rating   |
| ENG_PREV   | Numeric    | Engineering - Prior Rating      |
| PLANT_CURR | Numeric    | Plant Support - Current Rating  |
| PLANT_LAST | Numeric    | Plant Support - Previous Rating |
| PLANT_PREV | Numeric    | Plant Support - Prior Rating    |

## A.7 HPIP

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME |
|------------|------------|------------------|
| PLANTNAME  | Character  | Plant            |
| DOCKET     | Character  | Docket           |
| EVENT DATE | Date       | Event Date       |
| POWER_LVL  | Character  | Power Level      |
| PERS_CODE  | Character  | Personnel Code   |
| ACT_TYPE   | Character  | Activity Type    |
| ROOT_CAUSE | Character  | Root Cause       |
| COMMENT    | Character  | Comment          |

## A.8 Utilities

| FIELD NAME | FIELD TYPE | EDIT SCREEN NAME  |
|------------|------------|-------------------|
| PLANTNAME  | Character  | Plant Name        |
| VENDOR     | Character  | Vendor            |
| REGION     | Character  | Region            |
| DOCKET     | Numeric    | Docket            |
| LOCATION   | Character  | Location          |
| UTILITY    | Character  | Utility           |
| PLANT TYPE | Character  | Plant Type        |
| OPER DATE  | Date       | Date of Operation |
| MEMO1      | Memo       | Memo              |
| CHG DATE   | Date       | NOT AVAILABLE     |
| CHG USER   | Character  | NOT AVAILABLE     |

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## **APPENDIX B**

### **HFIS - QUICK HELP**

## Appendix B - Human Factors Information System (HFIS) - Quick Help

### GLOBAL COMMANDS

|                           |     |
|---------------------------|-----|
| HELP                      | F1  |
| EXIT SYSTEM               | F10 |
| RETURN TO PREVIOUS WINDOW | Esc |

### MOVING AROUND MENUS

|                           |            |
|---------------------------|------------|
| EXIT CURRENT SCREEN       | Esc        |
| SELECT HIGHLIGHTED OPTION | Enter      |
| UP/DOWN ONE ROW           | ↑/↓        |
| TOP/BOTTOM OF MENU        | PgUp/ PgDn |

### BROWSE COMMANDS

|                       |            |
|-----------------------|------------|
| HELP/MORE             | F1         |
| FILTER ON DATABASE    | F3         |
| EXPORT RECORD         | F4         |
| ADD RECORD            | F5         |
| SORT                  | F9         |
| UP/DOWN ONE ROW       | ↑/↓        |
| LEFT/RIGHT ONE COLUMN | ←/→        |
| UP/DOWN ONE SCREEN    | PgUp/ PgDn |
| TOP/BOTTOM OF LIST    | Home/End   |

### FILTER COMMANDS

|                   |     |
|-------------------|-----|
| HELP              | F1  |
| DISPLAY PICK LIST | F2  |
| RESET             | F3  |
| LOAD              | F5  |
| SAVE              | F6  |
| DELETE            | F8  |
| EXECUTE           | F9  |
| EXIT              | F10 |

### EDIT COMMANDS

|                    |            |
|--------------------|------------|
| COPY RECORD        | F5         |
| NEXT FIELD         | F7         |
| PREVIOUS FIELD     | F8         |
| NEXT RECORD        | Alt F7     |
| PREVIOUS RECORD    | Alt F8     |
| PREVIOUS/NEXT PAGE | PgUp/ PgDn |
| FIRST/LAST PAGE    | Home/End   |

### MEMO/COMMENT COMMANDS

TO EDIT TYPE "Y" IN THE BRACKETS

|                             |                |
|-----------------------------|----------------|
| SAVE ENTRIES AND EXIT       | F7             |
| READ FILE                   | F8             |
| INSERT/OVERWRITE MODES      | Ins            |
| DELETE LINE                 | Ctl Y          |
| DELETE ONE CHARACTER        | Del            |
| BEGINNING/END OF FILE       | Home/End       |
| UP/DOWN ONE SCREEN          | PgUp/ PgDn     |
| BEGINNING/<br>END OF COLUMN | Ctl PgUp/ PgDn |

### HFIS REPORT COMMANDS

|                           |       |
|---------------------------|-------|
| LOOK-UP FIELDS            | F2    |
| SELECT HIGHLIGHTED REPORT | Enter |



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## **APPENDIX C**

### **CODES FOR HPIP DATA ENTRY FORM**

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## CODES FOR HPIP DATA ENTRY FORM

### PERSONNEL CODES

- P.1 Contractors**
  - P.1.A Administrator/Manager
  - P.1.B Chemist
  - P.1.C Engineer
  - P.1.D Radiological Technician
  - P.1.E Security Guard
  - P.1.F Technician/Mechanic
- P.2 Utility Employees**
  - P.2.A Chemist
  - P.2.B Design Engineer
  - P.2.C Electrician
  - P.2.D I/C Technician
  - P.2.E Manager
  - P.2.F Mechanic
  - P.2.G Outage Planning androl
  - P.2.H Plant Engineer
  - P.2.J Project Management
  - P.2.K Radiological Technician
  - P.2.L Security Guard
  - P.2.M Support Engineer
- P.3 Operations**
  - P.3.A Non-licensed Operator
  - P.3.B Reactor Operator
  - P.3.C Senior Reactor Operator
  - P.3.D Shift Supervisor
  - P.3.E Shift Technical Advisor
- P.4 SUPERVISOR**
- P.5 MANAGER**
- P.6 Other**

### ACTIVITY TYPE CODES

- A.1 Calibrations
- A.2 Control room operations
- A.3 Engineering
- A.4 Fuel Handling
- A.5 Housekeeping
- A.6 Maintenance
- A.7 Modification/installation
- A.8 Non-technical specification testing
- A.9 Outside Control Room Operations
- A.10 Radiological
- A.11 Surveillance
- A.12 Trouble-shooting
- A.13 Unknown
- A.14 Other

See reverse for ROOT CAUSE CODES

For P.6 and A.14, enter explanation below the codes section in the HPIP Data Entry Form.

If P.4 or P.5 is entered, enter another code to identify personnel being supervised/managed.

# CODES FOR HPIP DATA ENTRY FORM

## ROOT CAUSE CODES

| R.1 PROCEDURES                    |                                       | R.3 COMMUNICATIONS                                                      |                                          | R.5 HUMAN ENGINEERING                  |                                   |
|-----------------------------------|---------------------------------------|-------------------------------------------------------------------------|------------------------------------------|----------------------------------------|-----------------------------------|
| <b>R.1.A Not Used</b>             |                                       | <b>R.3.A Misunderstood Verbal Communication</b>                         |                                          | <b>R.5.A Human - Machine Interface</b> |                                   |
| R.1.A.1                           | no procedure                          | R.3.A.1                                                                 | standard terminology not used            | R.5.A.1                                | labels LTA                        |
| R.1.A.2                           | not available or inconvenient for use | R.3.A.2                                                                 | repeat back not used                     | R.5.A.2                                | arrangement/placement             |
| R.1.A.3                           | procedure difficult to use            | R.3.A.3                                                                 | long message                             | R.5.A.3                                | instrument/displays LTA           |
| R.1.A.4                           | use not required but should be        | R.3.A.4                                                                 | noisy environment                        | R.5.A.4                                | controls LTA                      |
| <b>R.1.B Followed Incorrectly</b> |                                       | <b>R.3.B No Communication or Not Timely</b>                             |                                          | R.5.A.5                                | monitoring alertness LTA          |
| R.1.B.1                           | format confusing                      | R.3.B.1                                                                 | no method available                      | R.5.A.6                                | unit differences                  |
| R.1.B.2                           | > 1 action/step                       | R.3.B.2                                                                 | late communication                       | <b>R.5.B Work Environment</b>          |                                   |
| R.1.B.3                           | excess references                     | <b>R.3.C Turnover LTA</b>                                               |                                          | R.5.B.1                                | housekeeping poor                 |
| R.1.B.4                           | multiple unit references              | <b>R.4 MANAGEMENT SYSTEMS</b>                                           |                                          | R.5.B.2                                | hot/cold                          |
| R.1.B.5                           | no checkoff                           | <b>R.4.A Standards, Policies, or Administration Controls (SPAC) LTA</b> |                                          | R.5.B.3                                | bad lights                        |
| R.1.B.6                           | checkoff misused                      | R.4.A.1                                                                 | no SPAC                                  | R.5.B.4                                | noisy                             |
| R.1.B.7                           | data/computations wrong or incomplete | R.4.A.2                                                                 | not strict enough                        | R.5.B.5                                | high radiation/contamination      |
| R.1.B.8                           | graphics LTA                          | R.4.A.3                                                                 | confusing or incomplete                  | R.5.B.6                                | cramped quarters                  |
| R.1.B.9                           | equipment identification LTA          | R.4.A.4                                                                 | technical error                          | <b>R.5.C Complex System</b>            |                                   |
| R.1.B.10                          | ambiguous instructions                | R.4.A.5                                                                 | drawings/prints LTA                      | R.5.C.1                                | knowledge-based decision required |
| R.1.B.11                          | limits LTA                            | <b>R.4.B SPAC Not Used</b>                                              |                                          | <b>R.5.D Non-Fault Tolerant System</b> |                                   |
| R.1.B.12                          | misuse second check                   | R.4.B.1                                                                 | communication of SPAC LTA                | R.5.D.1                                | errors not detectable             |
| R.1.B.13                          | details LTA                           | R.4.B.2                                                                 | recently changed                         | R.5.D.2                                | errors not recoverable            |
| <b>R.1.C Wrong/Incomplete</b>     |                                       | R.4.B.3                                                                 | enforcement LTA                          | <b>R.6 IMMEDIATE SUPERVISION</b>       |                                   |
| R.1.C.1                           | typo                                  | R.4.B.4                                                                 | no way to implement                      | <b>R.6.A Preparation</b>               |                                   |
| R.1.C.2                           | sequence wrong                        | R.4.B.5                                                                 | accountability LTA                       | R.6.A.1                                | no preparation                    |
| R.1.C.3                           | facts wrong                           | <b>R.4.C Management Attention &amp; Oversight</b>                       |                                          | R.6.A.2                                | work package LTA                  |
| R.1.C.4                           | incomplete/situation not covered      | R.4.C.1                                                                 | infrequent audits & evaluations (a & e)  | R.6.A.3                                | Pre-job briefing LTA              |
| R.1.C.5                           | wrong revision used                   | R.4.C.2                                                                 | a & e lack depth                         | R.6.A.4                                | walk-through LTA                  |
| R.1.C.6                           | second checker needed                 | R.4.C.3                                                                 | a & e not independent                    | R.6.A.5                                | tag out LTA                       |
| <b>R.2 TRAINING</b>               |                                       | R.4.C.4                                                                 | external operating experience review LTA | R.6.A.6                                | scheduling LTA                    |
| <b>R.2.A No Training</b>          |                                       | <b>R.4.D Corrective Action</b>                                          |                                          | R.6.A.7                                | worker selection LTA              |
| R.2.A.1                           | task not analyzed                     | R.4.D.1                                                                 | corrective action LTA                    | <b>R.6.B Supervision During Work</b>   |                                   |
| R.2.A.2                           | decided not to train                  | R.4.D.2                                                                 | corrective action not yet implemented    | R.6.B.1                                | no supervision                    |
| R.2.A.3                           | no learning objective                 | R.4.D.3                                                                 | internal operating experience review LTA | R.6.B.2                                | LTA supervision                   |
| <b>R.2.B Understanding LTA</b>    |                                       | <b>R.4.E Employee Communication/Organization Culture LTA</b>            |                                          | R.6.B.3                                | crew teamwork LTA                 |
| R.2.B.1                           | learning objective LTA                | R.4.E.1                                                                 | employee communication LTA               | <b>LTA = Less than adequate</b>        |                                   |
| R.2.B.2                           | lesson plan LTA                       | R.4.E.2                                                                 | no employee feedback                     |                                        |                                   |
| R.2.B.3                           | instruction LTA                       | R.4.E.3                                                                 | organizational culture LTA               |                                        |                                   |
| R.2.B.4                           | practice/repetition LTA               |                                                                         |                                          |                                        |                                   |
| R.2.B.5                           | testing LTA                           |                                                                         |                                          |                                        |                                   |
| R.2.B.6                           | continuing training LTA               |                                                                         |                                          |                                        |                                   |

**APPENDIX D**

**HFIS INSPECTION INFORMATION  
MODULE JOB AID**



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## Appendix D - HFIS Inspection Information Module Job Aid

| DEPARTMENT                                                                                                                                                                                                                 | CATEGORY                           | AREA                      | DETAILS                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------|----------------------------------------------------------------------|
| A Operations<br>B Instrument & Control<br>C Electrical<br>D Mechanical<br>E Chemistry<br>F Radiation Protection<br>G Engineering<br>H Contractor<br>I Training<br>J QA/QC<br>K Plant Management<br>L Planning & Scheduling | A Training                         | A Initial                 | 01 No training                                                       |
|                                                                                                                                                                                                                            |                                    | B Continuing/requal       | 02 Inadequate training                                               |
|                                                                                                                                                                                                                            |                                    | C OJT                     | 03 Training process problem                                          |
|                                                                                                                                                                                                                            |                                    | D Simulator               | 04 Task qualification                                                |
|                                                                                                                                                                                                                            |                                    |                           | 05 Individual knowledge less than adequate                           |
|                                                                                                                                                                                                                            | B Procedures & Reference Documents | E Normal                  | 06 No procedure/reference document                                   |
|                                                                                                                                                                                                                            |                                    | F Off-normal              | 07 Inadequate procedure/reference document                           |
|                                                                                                                                                                                                                            |                                    | G Emergency               | 08 Failure to follow procedure/reference document                    |
|                                                                                                                                                                                                                            |                                    | H Surveillance and test   | 09 Procedure/reference documents/development/maintenance program LTA |
|                                                                                                                                                                                                                            |                                    | I Administrative          | 10 Made an error using procedure/reference document                  |
|                                                                                                                                                                                                                            |                                    | J Special                 |                                                                      |
|                                                                                                                                                                                                                            | C Organizational Issues            | K Staffing                | 11 Inadequate staffing                                               |
|                                                                                                                                                                                                                            |                                    |                           | 12 Poor task allocation                                              |
|                                                                                                                                                                                                                            |                                    | L Overtime                | 13 Inadequate controls                                               |
|                                                                                                                                                                                                                            |                                    |                           | 14 Excessive number of hours worked                                  |
|                                                                                                                                                                                                                            | D Management and Supervision       |                           | 15 Frequent use of overtime                                          |
|                                                                                                                                                                                                                            |                                    | M Attention and Oversight | 16 No supervision                                                    |
|                                                                                                                                                                                                                            |                                    |                           | 17 Inadequate supervision or involvement                             |
|                                                                                                                                                                                                                            |                                    |                           | 18 Management expectations LTA                                       |
|                                                                                                                                                                                                                            |                                    | N Work Control            | 19 Scheduling and planning                                           |
|                                                                                                                                                                                                                            |                                    |                           | 20 Worker Selection (unqualified worker)                             |
|                                                                                                                                                                                                                            |                                    | O Corrective actions      | 21 Individual corrective actions LTA                                 |
|                                                                                                                                                                                                                            |                                    |                           | 22 Action not yet started                                            |
|                                                                                                                                                                                                                            |                                    |                           | 23 No action planned                                                 |
|                                                                                                                                                                                                                            |                                    |                           | 24 Corrective action program LTA                                     |

| DEPARTMENT | CATEGORY                                 | AREA                                                                                                        | DETAILS                                                                                                                                                                       |
|------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | D Management and Supervision (continued) | P Self-evaluation                                                                                           | 25 Root cause LTA                                                                                                                                                             |
|            | E Communication                          | Q Verbal<br>R Written                                                                                       | 26 Misunderstood information<br>27 Communication not timely<br>28 Communication LTA<br>29 No communication                                                                    |
|            | F Human - System                         | S Alarms<br>T Controls<br>U Displays<br>V Panel/work station layout<br>W Equipment<br>X Tools and materials | 30 Labels LTA<br>31 Information organization LTA<br>32 Size, shape or coding LTA<br>33 Placement or location LTA<br>34 Information format LTA                                 |
|            | G Work Factors                           | Y Work Practices                                                                                            | 35 Work practices or skill of the craft LTA<br>36 Non-conservative decision-making/questioning attitude LTA<br>37 Tag outs<br>38 Pre-brief quality<br>39 Work package quality |
|            |                                          | Z Work Environment                                                                                          | 40 Temperature<br>41 Light<br>42 Noise<br>43 Radiation<br>44 Work Area/Layout                                                                                                 |
|            |                                          | AA Attention                                                                                                | 45 Independent verification/plant tours LTA<br>46 Attention/self-checking LTA                                                                                                 |

## **APPENDIX E**

### **HFIS LER CODING INSTRUCTIONS**

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02/18/94  
REVISION 1

HUMAN FACTORS INFORMATION SYSTEM  
LER CODING INSTRUCTIONS

**General guidance:**

First, determine if LER is human performance related (HPR). This can usually be done by reading the root cause section of the LER. An event is HPR if the root cause involves:

- personnel error
- procedure problems
- planning and scheduling problems
- training problems
- communication problems
- work environment problems

Code all human performance related LER's, even those identified as voluntary.

If cause is unknown and report indicates in block 14 that supplemental information will be submitted, discard LER and code when supplemental report is filed.

**Plant name:** select name from pick list on HFIS.

**Docket number:** enter 3-digit number

**Event date:** enter date as it appears in block 5 of LER.  
Always use 2-digit entries for day and month.

**LER Number** enter year and sequential number of LER shown in block 6 of LER. Sequential number should always be 3 digits. Use zeros to any empty spaces.  
Example: 93-003 or 93-022

**Event time:** enter information based on a 24-hour clock. Each time entry should contain 4 digits. The time should reflect the time the action/event occurred (ESF actuation, time of inappropriate action) or should have occurred (time of day of missed fire watch) and not the time the error was discovered.



Enter "NA" for event time if the time is not stated, or if the time when the error is discovered is not related to the original error. For example, the discovery time for an incorrectly assembled valve or the discovery of an incorrect calculation are not related to the original error and should be coded "NA". The one exception to this is if the LER states the time of the original error. Using the above example, if the LER states the time that the valve was incorrectly assembled, then code the time. NA is not accepted as a valid event time. A "0" is used if the event time is unknown or not applicable. If the power level is NA and the event time is 0, this is equivalent to event time being NA. A known or unknown power level and a 0 event time is equivalent to an unknown event time.

**Issue date:** No data entry required.

**Power level:** Enter the actual power level when an event occurred during and is related to the power level.

Enter "0" only when the event occurred during and is related to the shutdown condition.

Enter NA when the reported event is unrelated to the power level. (Example: engineering re-analysis)

**Micro fiche:** No data entry required

**Systems Involved:** No data entry required

**Personnel  
Category:**

**General guidance:**

- Choose all that apply.
- Each category contains both workers, supervisors, planners and procedure writers in that work group.
- Choose only those individuals involved with committing or exacerbating an error not those that discover the error.
- If the personnel category of the worker committing the error is unknown, leave the category blank.
- Text may not specifically name a personnel category. However, if the text contains sufficient information to identify the category, code as appropriate using work group definitions.
- If the LER does not specifically state that operations workers are licensed, select "non-licensed operator".
- If personnel are contract workers, code by work area and enter "contractor" under "other".

**Work group definitions:**

Licensed Operator: all licensed operators including RO and SRO, regardless of position. This category included SS and STA(if the text specifically states that the STA is licensed.)

Non-licensed operator: operations personnel when the LER does not specifically state that workers are licensed and includes rad-waste operators, auxiliary operators, and plant equipment operators.

Instrument and control: includes technicians referred to by this name; may also include those titled maintenance technicians.

Electrical: includes electricians and electrical maintenance personnel.

Mechanical: includes mechanics and mechanical maintenance personnel.

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Personnel  
Category  
Cont'd

Engineer: includes all types of engineers.

Radiological protection: includes health physics,  
RP or HP technicians.

Chemistry: includes chemistry and  
radiochemistry technicians.

Security: includes all security workers

Other: include the following personnel in this  
category by writing in the name of the group.  
QA/QC, Fire, and Contractor (together with the  
category the contractor is working).

**Work Type:**

**General guidance:**

- Check all that apply
- Focus on the type of work being done when the error was committed, not the work in progress when the error is discovered. If unable to determine the work type when error was committed, then leave blank.

**Work type definitions:**

Operating: all normal, abnormal and emergency operating activities including planning and scheduling, fire watch, walkdowns, operator rounds and general outage activities

Testing: testing of equipment including all post maintenance and surveillance testing.

activities.  
Calibration: all calibration and adjustment

Troubleshooting: activities involving a set process used to identify source of a known problem.

Maintenance: general maintenance and repair

Engineering: all engineering activities including calculations

Procedure development: all work involved with the development and revision to procedures

Refueling: limited to refueling floor activities

Modification: any activities involving physical installation of a design change to the plant.

Other: includes housekeeping (events involving cleaning activities), radiological (decontamination activities), and QA/QC.

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**Type of  
Task**

**Behavior:**

Skill-based - highly automated sensory-motor and cognitive performance taking place without conscious control

Rule-based - rules or patterns of behavior that are to some extent able to be memorized

Knowledge-based - decision making and problem solving occur

**Action Error:** Focus on the error when it was committed not when it is discovered. This may require some level of interpretation.  
If available information is insufficient to make a determination, select "Unavailable"

**Action error definitions:**

Untimely action: correct action at the wrong time  
(ex. beginning work before authorized)

Omission: failure to perform all steps in a task  
(both procedure governed and non-procedure governed (ex. failure to notify control room of beginning of test)

Out of sequence: perform task steps in the wrong order

Wrong action: correctly performs an action which should not have been performed (ex. wrong unit/wrong train)

Extraneous: unintentional action (ex. bumping into equipment, dropping tools)

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**Contributing  
Factors:**

Focus on the error when it was committed not when it is discovered. This may require some level of interpretation. If available information is insufficient to make a determination, select "Information unavailable"

**Contributing factors definitions:**

Inadequate training: training not sufficiently detailed or not specific.

Improper training: wrong information presented in training (ex. training taught task differently than how task is performed at the plant)

No training: no training presented

Procedure not followed: worker failed to follow (failed to take procedure to the work site, brought wrong procedure to the work site, abandoned use of the procedure) failed to use adequate self-checking

Procedure inadequate: procedure less than adequate due to problems with format, content, equipment identification, and/or quality of graphics

Lack of procedure: no procedural guidance available

Procedure wrong: procedure contains wrong information, wrong sequence of steps, wrong equipment identifications, does not reflect current plant configuration.

Human system interface: less than adequate: labels, arrangement or placement on panels or controls, information on a display, panel design

Work environment: less than adequate lighting, excessive noise, temperature extremes, cramped work space, radiological conditions

Verbal communication: missing or less than adequate verbal communication

Written communication: work order packages, technical specifications



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Work Schedule: shift length, excessive overtime

Work load: too many things to do, pressure to maintain schedule

Management and Planning: Original design/installation errors that should have been detected through surveillance, inspections, etc,

Shift turnover: less than adequate or no turnover

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**Plant Identified**

**Root Cause:** Enter text from report if specified

**Corrective**

**Actions:** Enter text from report if specified

**Type of Event:** No data entry required

**Cognitive Errors:** Focus on the error when it was committed not when it is discovered. This may require some level of interpretation. If available information is insufficient to make a determination, select "Information unavailable"

**Personnel**

**Effect Code:** No data entry required

**Reportability**

**Code:** Select all that are marked on LER

**Personnel**

**Activity Code:** No data entry required

## LER DATA ENTRY SHEET

Plant name: (as marked on LER and selected from HFIS pick list)

Event date:(as marked on LER)

LER number:(as marked on LER)

Event time:

Power level:

Personnel category:

- licensed operator
- non-licensed operator
- instrument and control
- electrical
- mechanical
- engineer
- radiological protection
- chemistry
- security
- other

Work type:

- operating
- testing
- calibration
- troubleshooting
- maintenance
- engineering
- procedure development
- refueling
- modification
- other

Task behavior:

- skill
- rule
- knowledge

Action error:

- unavailable
- untimely action
- omission
- out of sequence
- wrong action
- extraneous action

Contributing factors:

- information unavailable
- inadequate training
- improper training
- no training
- procedure not followed
- procedure inadequate
- lack of procedure
- procedure wrong
- human system interface
- work environment
- verbal communication
- written communication
- work schedule
- work load
- management and planning
- shift turnover

Plant identified root cause:

(as marked on LER by coder)

Alternative root cause: (coder must specify here.)

Corrective Actions:

(as marked by coder)

Cognitive error:

- attention deficit
- misinterpreting information
- forgetting
- false assumption
- poor judgement
- boredom
- other

Reportability codes:

(as marked on LER)

**APPENDIX F**

**HFIS INSPECTION REPORT  
CODING INSTRUCTIONS**

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## Appendix F - HFIS Inspection Report Coding Instructions

### Selecting Department

#### Department definitions:

|                         |                                                                                                                                                                                                                                                                                  |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operations:             | all licensed operators including RO and SRO, regardless of position. This category includes SS, STA, Non-licensed operators, rad-waste operators, auxiliary operators, plant equipment operators, fire department, work planning, outage planning, and project management group. |
| Instrument and control: | includes technicians referred to by this name; may also include those titled maintenance technicians or instrument technician. Tasks are usually associated with conducting surveillance or calibrating and functionally testing equipment                                       |
| Electrical:             | includes electricians and electrical maintenance personnel.                                                                                                                                                                                                                      |
| Mechanical:             | includes mechanics and mechanical maintenance personnel.                                                                                                                                                                                                                         |
| Chemistry:              | includes chemistry and radiochemistry technicians.                                                                                                                                                                                                                               |
| Radiation protection:   | includes health physics, RP or HP technicians.                                                                                                                                                                                                                                   |
| Engineer:               | includes all types of engineers. (ie: design, plant support, system engineers)                                                                                                                                                                                                   |
| Contractor:             | includes all contractors regardless of area                                                                                                                                                                                                                                      |
| Training:               | includes all training personnel                                                                                                                                                                                                                                                  |
| QA/QC:                  | includes all QA/QC may include in-service testing and inspection, and non destructive testing personnel                                                                                                                                                                          |
| Plant Management:       | includes all management and supervisory personnel regardless of department                                                                                                                                                                                                       |
| Planning & Scheduling   | includes all staff in outage planning and work control                                                                                                                                                                                                                           |

Selecting Area and Details for:

A. Training

Areas

A. Initial

if training is basic training leading up to initial qualifications

B. Continuing or requalification

if training present advanced topics or presents refresher training on basic topics

C. OJT

if training is job performance oriented and is leading to task qualification

D. Simulator

if training is conducted using a control room simulator

Details

01 No training

if the problem is due to no providing any training on a specific topic

02 Inadequate training

if the problem is due to incomplete or incorrect training

03 Training Process Problem

if the problem is due to a break down in the SAT (examples: inadequate job or task analysis, inadequate program evaluation or feedback, failure to keep lesson materials current)

04 Task qualification

if the worker is not qualified to do the job assignment

05 Individual knowledge LTA

if the individual worker completed training but was unable to put training into practice



Selecting Area and Details for:

## B. Procedures & Reference Documents

Areas:

### E. Normal

procedures related to all phases of normal plant operation including:

- corrective and preventative maintenance
- operation and response to transients
- radiological and decontamination

### F. Off-normal

procedures related to refueling,

### G. Emergency

all EOPs

### H. Surveillance and test

procedures governing activities related to:

- testing of equipment,
- calibration
- troubleshooting

### I. Administrative

procedures related to general activities such as:

- tagging
- scaffolding
- housekeeping
- configuration control

### J. Special

procedures related to unique situations such as once in a plant life test, installation of modifications, QA/QC.

Details:

#### 06 No procedure/reference document

if a document does not exist

#### 07 Inadequate procedure/reference document

if a document exists but does not provide sufficient guidance for the worker to avoid error or

if the document contains incorrect information

#### 08 Failure to follow procedure/reference document

if the document content is correct but the worker fails to follow the guidance or

#### 09 Procedure/reference document development or maintenance program LTA

if the document was developed using inadequate analysis or if it has not been updated in either the original or in a specific copy.

#### 10 Made an error using procedure/reference document

if the correct document was used but a step was skipped, misread or misinterpreted by the user

Selecting Area and Details for:

C. Organizational Issues

Area: K. Staffing  
if the issue is due to the number of workers or how they were used

Details: 11 Inadequate staffing  
if the problem is due to inadequate number of workers

12 Poor task allocation  
if the total number of workers was adequate but the way in which work was distributed was uneven or  
if individual work overload, too many actions required at one time, too much information had to be processed concurrently

Area: L. Overtime  
if the issue is due to use of approved or unapproved overtime

Details: 13 Inadequate controls  
if there is no guidance for approval and use of overtime or if the guidance is weak

14 Excessive number of hours worked  
if the problem was caused by worker fatigue due to the number of hours worked or change in shift cycle

15 Frequent use of overtime  
if there is no guidance to limit the amount of overtime or the conditions under which overtime may be used

Selecting Area and Details for:

D. Management and Supervision

Area: M. Attention and oversight  
if the problem is due to management of a work activity

Details: 16 No supervision  
if the problem is due to a lack of supervision  
17 Inadequate supervision  
if the problem is due to less than adequate supervision  
if supervisor did not detect fatigue or fitness-for-duty problems  
18 Management expectations LTA  
if standards or expectations are not adequately defined or inconsistently enforced

Area: N. Work Control  
if the problem is due to how work is assigned and managed

Details: 19 Scheduling and planning  
if the problem is due to missing or inadequate scheduling or planning  
(examples - bringing the wrong tools to the job)  
20 Worker selection  
if the problem is due to the fact that the worker is not qualified to perform the task

Area: O. Corrective Actions  
if the current problem is because previous problems were not adequately addressed

Details: 21 Individual action less than adequate  
if a specific fix was not completed or if completed, failed to prevent recurrence  
22 Action not yet started  
if a specific corrective action was previously identified but not yet begun  
23 No action planned  
if a previous occurrence did not identify any corrective action  
24 Corrective action program LTA  
if the overall program for identifying and correcting problems is inadequate

Area: P. Self-evaluation if the problem is due to inadequate or missing licensee evaluation

Details: 25 Root cause less than adequate if the root cause determination process does not identify true root causes

Selecting Area and Details for:

E. Communications

Areas:

Q Verbal

if the problem is related to instructions or information transmitted orally

R Written

if the problem is related to instructions or information other than that in procedures which is transmitted in writing (examples: night orders, memos, operator aids for operation of equipment)

Details:

26 Misunderstood information

if the information is correctly stated or written but is not understood

27 Communication not timely

if the correct information is received late (example: starting a test before informing the control room) or if groups fail to cross check

28 Communication LTA

if information is missing key elements (examples: not specifying a particular train) or if the information is incorrect (misstating information - providing the wrong identification number for a piece of equipment) or if communication is confusing

29 No communication

if information is not shared at all or  
if group fails to cross check when appropriate

Selecting Area and Details for:

F. Human System Interface

Area: S. Equipment  
T. Instrumentation and controls  
U. Displays  
V. Panel/work station layout  
W. Equipment  
X. Tools and materials

Details: 30 Labels less than adequate  
if the wrong equipment is selected because of missing, wrong or difficult to read labels or  
if language on label is inconsistent with language in the procedure

31 Information organization LTA  
if the understandability of information (test/content) and identifiability with associated alarms, controls, displays is inadequate

32 Size, shape or coding LTA  
if the size, shape, coding, or scale marking scheme is inadequate

33 Placement of location LTA  
if the placement, location, spacing, or arrangement of alarm, control, display, panel or workstation, tools, materials or equipment are inadequate

34 Information format LTA  
if the presentation of information on menus for CRT screens or large overview display panel are inadequate



Selecting Area and Details for:

G. Work Factors

Area: Work Practices

- Details:
- 35 Work practices or skill of the craft LTA
    - if the skill of the craft activities are not performed consistent with management expectations, safety significance of activity or industry standards
  - 36 Non-conservative decision making/questioning attitude LTA
    - if personnel fail to stop work or establish appropriate controls when presented with unfavorable or uncertain conditions
  - 37 Tag outs
    - if the problem is due to missing or incorrect tagging
  - 38 Pre-job preparation
    - if the pre-job briefing or walk thru was missing or inadequate
  - 39 Work package quality
    - if the work package is missing information or if the information contained in the package is incorrect

Area: Z Work Environment

- Details:
- 40 Temperature
    - if the problem is due to temperature or weather conditions
  - 41 Light
    - if the problem is due to level of lighting, glare or wrong color lighting
  - 41 Noise
    - if the problem is due to distracting noise level
  - 42 Radiation
    - if the problem is due to work practices required because of the radiation level or
    - if performance of the task was made difficult by requirements of worker to wear protective clothing
  - 43 Work Area/Layout
    - if the problem is due to limited access to equipment or controls or
    - if the work area is small or
    - if there is insufficient space to perform the task

Area: AA Attention

Details: 45 Independent verification/plant tours LTA  
if personnel fail to identify errors through independent verification or  
perform verifications inconsistent with management expectations or  
industry standards

46 Attention/self-checking LTA  
if personnel become distracted, fail to verify appropriate actions prior to  
taking action



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**APPENDIX G**

**HFIS INSPECTION INFORMATION  
MODULE DATA COLLECTION SHEET**

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# **Appendix G** **HFIS Inspection Information Module** **Data Collection Sheet**

Initial or follow-up information? \_\_\_\_\_  
 SITE NAME: \_\_\_\_\_

## **SALP INFORMATION:**

|       |               |          |   |   |   |
|-------|---------------|----------|---|---|---|
| Area: | Operations    | Rating : | 1 | 2 | 3 |
|       | Maintenance   |          | 1 | 2 | 3 |
|       | Engineering   |          | 1 | 2 | 3 |
|       | Plant Support |          | 1 | 2 | 3 |

## **APPLICABLE DOCKETS: CORRESPONDING REPORT #**

Unit 1 50 - \_\_\_\_\_  
 Unit 2 50 - \_\_\_\_\_  
 Unit 3 50 - \_\_\_\_\_

Last Date of SALP Period: \_\_\_\_\_

Document Date: \_\_\_\_\_

| DEPARTMENT | CATEGORY | AREA  | DETAILS | VIOLATION |
|------------|----------|-------|---------|-----------|
| _____      | _____    | _____ | _____   | _____     |
| _____      | _____    | _____ | _____   | _____     |
| _____      | _____    | _____ | _____   | _____     |
| _____      | _____    | _____ | _____   | _____     |
| _____      | _____    | _____ | _____   | _____     |
| _____      | _____    | _____ | _____   | _____     |
| _____      | _____    | _____ | _____   | _____     |

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## **APPENDIX H**

### **REPORTS**

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HUMAN FACTORS INFORMATION SYSTEM  
GENERAL PLANT INFORMATION

| <u>PLANT NAME</u> | <u>DOC#</u> | <u>TYPE</u> | <u>VENDOR</u> | <u>DATE OF<br/>OPERATION</u> | <u>UTILITY</u>                | <u>REG</u> | <u>LOCATION</u> | <u>NOTES</u> |
|-------------------|-------------|-------------|---------------|------------------------------|-------------------------------|------------|-----------------|--------------|
| NINE MILE POINT 2 | 410         | BWR         | GE            | 10/01/86                     | NIAGARA MOHAWK POWER<br>CORP. | 1          | SCRIBA, NY      |              |

HUMAN FACTORS INFORMATION SYSTEM  
REGULATORY INFORMATION

PLANT NAME: NINE MILE POINT 2  
DOCKET NO: 410

DCRDR INFORMATION

|                                      |          |
|--------------------------------------|----------|
| DCRDR FULLY IMPLEMENTED:             | YES      |
| DCRDR IMPLEMENTATION DATE:           | 02/13/91 |
| FINAL DCRDR SUMMARY REPORT DATE:     | 06/09/86 |
| AUDIT DATE:                          | 10/21/85 |
| 1ST TECHNICAL EVALUATION REPORT:     | 07/10/86 |
| 2ND TECHNICAL EVALUATION REPORT:     |          |
| 1ST SAFETY EVALUATION REPORT:        | 07/29/86 |
| 2ND SAFETY EVALUATION REPORT:        | 08/06/90 |
| FINAL SAFETY EVALUATION REPORT DATE: | 10/30/86 |

SPDS INFORMATION

|                           |          |
|---------------------------|----------|
| SPDS CERTIFICATIION DATE: | 07/11/89 |
| SPDS FULLY IMPLEMENTED:   | YES      |
| SPDS IMPLEMENTATION DATE: | 01/18/91 |

COMMENTS

REVIEW COMPLETE. SER WRITTEN. NO OPEN ISSUES.

# HUMAN FACTORS INFORMATION SYSTEM LER INFORMATION OVERVIEW

|                        |                    |
|------------------------|--------------------|
| PLANT NAME: ARKANSAS 1 | DOCKET NO: 50-313  |
| EVENT DATE: 08/04/94   | LER NUMBER: 94-001 |
| EVENT TIME: 0          | ISSUE DATE:        |
| POWER LEVEL: 0         | ACCN#: 0           |
| LER TITLE:             |                    |

| <u>PERSONNEL CATEGORY</u>    |     | <u>WORK TYPE</u>           |     |
|------------------------------|-----|----------------------------|-----|
| License Operator             |     | Operating                  |     |
| Non-License Operator         |     | Testing                    |     |
| Instrument and Control (I&C) | YES | Calibration                |     |
| Electrical                   |     | Troubleshooting            |     |
| Mechanical                   |     | Maintenance                | YES |
| Contractor                   |     | Engineering                |     |
| Radiological Protection      |     | Procedure Development      |     |
| Chemistry                    |     | Refueling                  |     |
| Security                     |     | Design Change Installation |     |
| Other                        |     | Other                      |     |

| <u>TYPE OF TASK BEHAVIOUR</u> |     | <u>ACTION ERROR</u> |     |
|-------------------------------|-----|---------------------|-----|
| Skill-Based                   |     | Untimely action     |     |
| Rule-Based                    |     | Ommission           |     |
| Knowledge-Based               | YES | Out of Sequence     | YES |
|                               |     | Wrong Action        |     |
|                               |     | Extraneous Action   |     |

## CONTRIBUTING FACTORS

|                                                                        |     |
|------------------------------------------------------------------------|-----|
| Inadequate Training                                                    |     |
| Improper Training                                                      |     |
| No Training                                                            |     |
| Procedures not followed                                                |     |
| Procedures Inadequate                                                  | YES |
| Lack of procedures                                                     |     |
| Procedures wrong                                                       |     |
|                                                                        |     |
| Human systems Interface (Labeling, noise, control panel, design, etc.) |     |
| Work Environment (Lighting, noise, temperature, confinement)           |     |
| Communications (verbal)                                                |     |
| Communications (written, work order, tech spec, etc.)                  |     |
| Work Schedule                                                          |     |
| Work Load                                                              |     |
| Management/Planning                                                    |     |
| Shift turnover                                                         |     |

HUMAN FACTORS INFORMATION SYSTEM  
LER INFORMATION OVERVIEW

PLANT IDENTIFIED ROOT CAUSE

Has the root cause of the event been identified?  
If yes, List root cause given in LER

YES

PERSONNEL OVERSIGHT DURING THE DESIGN CHANGE PROCESS

If an alternative root cause is plausible, other than that already cited in the LER, please specify.

CORRECTIVE ACTIONS AND THEIR EFFECT

What was the corrective action(s) taken by the plant?

A MEMORANDUM DISCUSSING THIS EVENT WAS DISTRIBUTED  
THE DESIGN CHANGE PROCESS HAS BEEN SUBSTANTIALLY IMPROVED SINCE THE  
MODIFICATION

Are the corrective actions likely to prevent the recurrence of similar events?

YES

COMMENTS

What type of cognitive errors appear to have contributed to the event?

Attention Deficit  
Misinterpretation of Information  
Forgetting  
False Assumption About Conditions  
Poor Judgement  
Boredome  
Other

YES

YES

REPORTABILITY CODES:

20.402(b)  
20.405(a)(1)(i)  
20.405(a)(1)(ii)  
20.405(a)(1)(iii)  
20.405(a)(1)(iv)  
20.405(a)(1)(v)  
20.405(c)

50.36(c)(1)  
50.36(c)(2)  
50.73(a)(2)(i)  
50.73(a)(2)(ii)  
50.73(a)(2)(iii)  
50.73(a)(2)(iv)  
50.73(a)(2)(v)

50.73(a)(2)(vii)  
50.73(a)(2)(viii)(A)  
50.73(a)(2)(viii)(B)  
50.73(a)(2)(x)  
73.71(b)  
73.71(c)  
Other

HUMAN FACTORS INFORMATION SYSTEM  
DCRDR/SPDS IMPLEMENTATION STATUS

| <u>PLANT NAME</u> | <u>DOCKET</u> | <u>DCRDR<br/>IMPLEMENTATION<br/>DATE</u> | <u>DCRDR<br/>COMPLETED</u> | <u>SPDS<br/>IMPLEMENTATION<br/>DATE</u> | <u>SPDS FULLY<br/>IMPLEMENTE</u> |
|-------------------|---------------|------------------------------------------|----------------------------|-----------------------------------------|----------------------------------|
| ARKANSAS 1        | 313           | 11/24/92                                 | YES                        | 05/01/85                                | YES                              |
| ARKANSAS 2        | 368           | 11/24/92                                 | YES                        | 05/01/85                                | YES                              |
| BEAVER VALLEY 1   | 334           | 12/08/89                                 | YES                        | 07/23/93                                | YES                              |
| BEAVER VALLEY 2   | 412           | 12/03/90                                 | YES                        | 12/04/90                                | YES                              |
| BELLEFONTE 1      | 438           |                                          | NO                         |                                         | NO                               |
| BELLEFONTE 2      | 439           |                                          | NO                         |                                         | NO                               |
| BIG ROCK POINT    | 155           | 12/30/93                                 | YES                        | 11/01/90                                | YES                              |
| BRAIDWOOD 1       | 456           | 05/08/91                                 | YES                        | 07/11/89                                | YES                              |
| BRAIDWOOD 2       | 457           | 01/17/92                                 | YES                        | 07/11/89                                | YES                              |
| BROWNS FERRY 1    | 259           |                                          | NO                         |                                         | NO                               |
| BROWNS FERRY 2    | 260           | 06/14/93                                 | YES                        | 10/19/93                                | YES                              |
| BROWNS FERRY 3    | 296           |                                          | NO                         |                                         | NO                               |
| BRUNSWICK 1       | 325           | 02/28/93                                 | YES                        | 05/16/85                                | YES                              |
| BRUNSWICK 2       | 324           | 12/09/91                                 | YES                        | 05/16/85                                | YES                              |
| BYRON 1           | 454           | 03/01/90                                 | YES                        | 03/31/85                                | YES                              |
| BYRON 2           | 455           | 02/22/91                                 | YES                        | 03/31/85                                | YES                              |
| CALLAWAY 1        | 483           | 03/01/87                                 | YES                        | 07/10/89                                | YES                              |
| CALVERT CLIFFS 1  | 317           | 06/11/93                                 | YES                        | 07/01/88                                | YES                              |
| CALVERT CLIFFS 2  | 318           | 06/11/93                                 | YES                        | 07/01/88                                | YES                              |
| CATAWBA 1         | 413           |                                          | NO                         | 12/08/89                                | YES                              |
| CATAWBA 2         | 414           |                                          | NO                         | 12/08/89                                | YES                              |
| CLINTON 1         | 461           | 01/27/89                                 | YES                        |                                         | YES                              |
| COMANCHE PEAK 1   | 445           | 07/17/90                                 | YES                        | 02/08/90                                | YES                              |
| COMANCHE PEAK 2   | 446           |                                          | NO                         |                                         | YES                              |
| COOK 1            | 315           | 01/15/91                                 | YES                        | 08/17/90                                | YES                              |
| COOK 2            | 316           | 07/30/92                                 | YES                        | 08/17/90                                | YES                              |
| COOPER STATION    | 298           | 12/18/91                                 | YES                        | 12/18/91                                | YES                              |
| CRYSTAL RIVER 3   | 302           |                                          | YES                        | 06/21/90                                | YES                              |
| DAVIS BESSE 1     | 346           | 06/30/90                                 | YES                        | 02/25/91                                | YES                              |
| DIABLO CANYON 1   | 275           |                                          | NO                         | 12/31/90                                | YES                              |

# HUMAN FACTORS INFORMATION SYSTEM LER PLANT ROOT CAUSE

| <u>PLANT NAME</u> | <u>DOCKET<br/>NUMBER</u> | <u>LER<br/>NUMBER</u> | <u>EVENT<br/>DATE</u> | <u>EVENT<br/>TIME</u> | <u>LER<br/>ISSUE DATE</u> | <u>PLANT POWER<br/>LEVEL</u> | <u>ROOT CAUSE</u>                                                                                                                                                                                               |
|-------------------|--------------------------|-----------------------|-----------------------|-----------------------|---------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NINE MILE POINT 2 | 410                      | 90-017                | 10/09/90              | 55                    | 11/08/90                  | 0                            | PERSONNEL ERROR--LACK OF SELF-VERIF ACTION BY 2 OPERATORS                                                                                                                                                       |
| NINE MILE POINT 2 | 410                      | 90-018                | 10/24/90              | 0                     | 11/26/90                  | 0                            | IMPROPER WORK PRACTICES                                                                                                                                                                                         |
| NINE MILE POINT 2 | 410                      | 90-021                | 10/26/90              | 0                     | 01/31/91                  | 0                            | INADEQUATE DESIGN ANALYSIS DUE TO LACK OF DOCUMENT TO CLEARLY DEFINE FUNCTIONS AND ROLE OF CERTAIN COMPONENTS                                                                                                   |
| NINE MILE POINT 2 | 410                      | 90-020                | 10/27/90              | 549                   | 11/21/90                  | 0                            | PROCEDURAL DEFICIENCY--CALIB PROCEDURE OF THE FLOW SWITCHES DIDN'T ACCOUNT FOR FLOW VARIATIONS BTW THE REDUNDANT FANS                                                                                           |
| NINE MILE POINT 2 | 410                      | 91-003                | 02/14/91              | 0                     | 03/18/91                  | 99                           | INADEQUATE WORK PRACTICES-FAILURE OF TEST PERSONNEL TO FOLLOW ADMINISTRATIVE GUIDANCE WHEN SUBSTITUTING TEST INSTRUMENTATION DURING PERFORMANCE OF SURVEILLANCE TESTING                                         |
| NINE MILE POINT 2 | 410                      | 91-002                | 02/15/91              | 0                     | 03/14/91                  | 100                          | FAILRE TO FOLLOW PROCEDURES-FAILURE TO ISSUE A MATERIAL ISSUE FORM TO THE STOREROOM AS REQUIRED BY PROCEDURES                                                                                                   |
| NINE MILE POINT 2 | 410                      | 91-015                | 02/20/91              | 0                     | 12/13/91                  | 100                          | VOLUNTARY LER - INADEQUATE PROCEDURE DEVELOPMENT & REVIEW - TECHNICAL REVIEWS FAILED TO IDENTIFY TEST'S IMPACT ON SYSTEM OPERABILITY IN THE EVENT OF A STANDBY LIQUID CONTROL SYSTEM INITIATION DURING TESTING. |
| NINE MILE POINT 2 | 410                      | 91-004                | 03/22/91              | 0                     | 04/22/91                  | 99                           | INADEQUATE WRITTEN COMMUNICATION. ADMINISTRATIVE PROCEDURE DID NOT PROVIDE ADEQUATE GUIDANCE OR MANAGEMENT EXPECTATIONS TO PERSONNEL PERFORMING WR TECHNICAL REVIEWS/EVALUATIONS.                               |
| NINE MILE POINT 2 | 410                      | 91-005                | 03/26/91              | 0                     | 04/23/91                  | 100                          | INADEQUATE WRITTEN COMMUNICATION; SPECIAL TEST PROCEDURE OMITTED RELEVANT INFORMATION.                                                                                                                          |
| NINE MILE POINT 2 | 410                      | 91-008                | 04/30/91              | 2055                  | 05/30/91                  | 100                          | ADMINISTRATIVE PROCEDURE CHANGES WERE NOT ENOUGH TO ALLOW CONTINUED OPERATION OF THE FILTER SYSTEM WITH A BROKEN LEVEL (INSTRUMENT).                                                                            |

**HFIS Inspection Module Summary**  
**for HOPE CREEK**  
**After 12/31/94 and before    /    /**

Total number of Human Performance items:    37

Dates Found: Earliest = 02/10/95 Latest = 12/01/95

| TRAINING<br>Total =       4             | PROCEDURES & REF DOCUMENT<br>Total =       13 | ORGANIZATIONAL ISSUES<br>Total =       1 | MANAGEMENT AND SUPERVISION<br>Total =       12 |
|-----------------------------------------|-----------------------------------------------|------------------------------------------|------------------------------------------------|
| Department Summary                      | Department Summary                            | Department Summary                       | Department Summary                             |
| Operations       4    100%              | Operations       10    77%                    | Operations       1    100%               | Operations       7    58%                      |
| I and C       0    0%                   | I and C       0    8%                         | I and C       0    0%                    | I and C       0    0%                          |
| Electrical       0    0%                | Electrical       1    8%                      | Electrical       0    0%                 | Electrical       2    17%                      |
| Mechanical       0    0%                | Mechanical       0    0%                      | Mechanical       0    0%                 | Mechanical       1    8%                       |
| Chemistry       0    0%                 | Chemistry       0    0%                       | Chemistry       0    0%                  | Chemistry       0    0%                        |
| R P       0    0%                       | R P       0    0%                             | R P       0    0%                        | R P       0    0%                              |
| Engineering       0    0%               | Engineering       2    15%                    | Engineering       0    0%                | Engineering       2    17%                     |
| Contractor       0    0%                | Contractor       0    0%                      | Contractor       0    0%                 | Contractor       0    0%                       |
| Training       0    0%                  | Training       0    0%                        | Training       0    0%                   | Training       0    0%                         |
| QA/QC       0    0%                     | QA/QC       0    0%                           | QA/QC       0    0%                      | QA/QC       0    0%                            |
| Plant Mgt       0    0%                 | Plant Mgt       0    0%                       | Plant Mgt       0    0%                  | Plant Mgt       0    0%                        |
| Plan & Sched       0    0%              | Plan & Sched       0    0%                    | Plan & Sched       0    0%               | Plan & Sched       0    0%                     |
| Detail Summary                          | Detail Summary                                | Detail Summary                           | Detail Summary                                 |
| No Training       0    0%               | No procedure       1    8%                    | Inadequate Staffing       1    100%      | Attention & oversight       3    25%           |
| Inadequate Training       2    50%      | Inadequate procedure       4    31%           | Poor Task Allocation       0    0%       | Work Control       0    0%                     |
| Train process problem       1    25%    | Did not use procedure       5    38%          | Inadequate Controls       0    0%        | Corrective actions       2    17%              |
| Task qual.       0    0%                | Procedure devel/maint LTA       1    8%       | Excessive hours worked       0    0%     | Self-evaluation       7    58%                 |
| Individual knowledge LTA       1    25% | Made error using procedure       2    15%     | Frequent OT       0    0%                |                                                |



**HFIS Inspection Module Summary**  
**for HOPE CREEK**  
**After 12/31/94 and before    /    /**

Total number of Human Performance items:    37      Dates Found: Earliest = 02/10/95 Latest = 12/01/95

| COMMUNICATIONS<br>Total =    4                   | HUMAN - SYSTEM INTERFACE<br>Total =    0                        | WORK FACTORS<br>Total =    3    |
|--------------------------------------------------|-----------------------------------------------------------------|---------------------------------|
| Department Summary                               | Department Summary                                              | Department Summary              |
| Operations            4    100%                  | Operations            0    ***%                                 | Operations            3    100% |
| I and C                0    0%                   | I and C                0    ***%                                | I and C                0    0%  |
| Electrical            1    25%                   | Electrical            0    ***%                                 | Electrical            0    0%   |
| Mechanical           0    0%                     | Mechanical           0    ***%                                  | Mechanical           0    0%    |
| Chemistry            0    0%                     | Chemistry            0    ***%                                  | Chemistry            0    0%    |
| R P                    0    0%                   | R P                    0    ***%                                | R P                    0    0%  |
| Engineering          1    25%                    | Engineering          0    ***%                                  | Engineering          0    0%    |
| Contractor            0    0%                    | Contractor           0    ***%                                  | Contractor           0    0%    |
| Training              2    50%                   | Training              0    ***%                                 | Training              0    0%   |
| QA/QC                0    0%                     | QA/QC                0    ***%                                  | QA/QC                0    0%    |
| Plant Mgt            0    0%                     | Plant Mgt            0    ***%                                  | Plant Mgt            0    0%    |
| Plan & Sched          0    0%                    | Plan & Sched          0    ***%                                 | Plan & Sched          0    0%   |
| Detail Summary                                   | Detail Summary                                                  | Detail Summary                  |
| Misunderstood<br>Info                    0    0% | Lables LTA            0    ***%                                 | Work Practice        2    67%   |
| Comminucation<br>Not Timely            0    0%   | Information<br>Organization<br>LTA                    0    ***% | Work Environ        0    0%     |
| Communication<br>LTA                    3    75% | Size, Shape<br>Coding LTA            0    ***%                  | Attention            1    33%   |
| No Comm              1    25%                    | Placement LTA        0    ***%                                  |                                 |
|                                                  | Information<br>Format LTA            0    ***%                  |                                 |

HUMAN FACTORS INFORMATION SYSTEM  
PREVENTIVE MEASURES LER'S

| <u>PLANT NAME</u> | <u>DOCKET<br/>NUMBER</u> | <u>LER<br/>NUMBER</u> | <u>EVENT<br/>DATE</u> | <u>EVENT<br/>TIME</u> | <u>LER<br/>ISSUE DATE</u> | <u>PLANT POWER<br/>LEVEL</u> |
|-------------------|--------------------------|-----------------------|-----------------------|-----------------------|---------------------------|------------------------------|
| NINE MILE POINT 2 | 410                      | 90-017                | 10/09/90              | 55                    | 11/08/90                  | 0                            |
| NINE MILE POINT 2 | 410                      | 90-018                | 10/24/90              | 0                     | 11/26/90                  | 0                            |
| NINE MILE POINT 2 | 410                      | 90-021                | 10/26/90              | 0                     | 01/31/91                  | 0                            |
| NINE MILE POINT 2 | 410                      | 90-020                | 10/27/90              | 549                   | 11/21/90                  | 0                            |
| NINE MILE POINT 2 | 410                      | 91-003                | 02/14/91              | 0                     | 03/18/91                  | 99                           |
| NINE MILE POINT 2 | 410                      | 91-002                | 02/15/91              | 0                     | 03/14/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-015                | 02/20/91              | 0                     | 12/13/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-004                | 03/22/91              | 0                     | 04/22/91                  | 99                           |
| NINE MILE POINT 2 | 410                      | 91-005                | 03/26/91              | 0                     | 04/23/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-008                | 04/30/91              | 2055                  | 05/30/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-009                | 05/03/91              | 0                     | 08/01/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-011                | 05/07/91              | 400                   | 06/05/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-010                | 05/08/91              | 757                   | 06/07/91                  | 99                           |
| NINE MILE POINT 2 | 410                      | 91-013                | 06/03/91              | 1717                  | 06/28/91                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-017                | 08/13/91              | 1548                  | 08/13/92                  | 100                          |
| NINE MILE POINT 2 | 410                      | 91-021                | 09/15/91              | 0                     | 10/16/91                  | 0                            |
| NINE MILE POINT 2 | 410                      | 91-023                | 12/12/91              | 322                   | 01/13/92                  | 55                           |
| NINE MILE POINT 2 | 410                      | 92-002                | 01/09/92              | 1200                  | 02/10/92                  | 100                          |
| NINE MILE POINT 2 | 410                      | 92-003                | 01/10/92              | 927                   | 02/10/92                  | 94                           |
| NINE MILE POINT 2 | 410                      | 92-004                | 02/26/92              | 0                     | 03/27/92                  | 95                           |
| NINE MILE POINT 2 | 410                      | 92-006                | 03/23/92              | 0                     | 04/22/92                  | 0                            |
| NINE MILE POINT 2 | 410                      | 92-012                | 04/12/92              | 0                     | 05/12/92                  | 0                            |
| NINE MILE POINT 2 | 410                      | 92-010                | 04/23/92              | 449                   | 05/21/92                  | 0                            |
| NINE MILE POINT 2 | 410                      | 92-013                | 05/27/92              | 1033                  | 06/26/92                  | 0                            |
| NINE MILE POINT 2 | 410                      | 92-015                | 07/02/92              | 1055                  | 08/03/92                  | 5                            |
| NINE MILE POINT 2 | 410                      | 92-018                | 07/28/92              | 122                   | 08/27/92                  | 100                          |
| NINE MILE POINT 2 | 410                      | 92-017                | 08/22/92              | 333                   | 09/21/92                  | 55                           |
| NINE MILE POINT 2 | 410                      | 92-019                | 09/16/92              | 1004                  | 10/16/92                  | 100                          |
| NINE MILE POINT 2 | 410                      | 92-020                | 09/25/92              | 1310                  | 10/26/92                  | 100                          |

# HUMAN FACTORS INFORMATION SYSTEM TRAINING ACCREDITATION STATUS

| Region | Licensee                            | Plant Name          | Accreditation |         | Programs |   |   |   |   |   |   |   |   |   |   |
|--------|-------------------------------------|---------------------|---------------|---------|----------|---|---|---|---|---|---|---|---|---|---|
|        |                                     |                     | Date          | Renewed | N        | R | S | A | Q | I | E | M | C | H | T |
| 1      | BALTIMORE GAS & ELECTRIC COMPANY    | CALVERT CLIFFS 1    | 08/01/88      | ✓       | x        | x | x | x | x |   |   |   |   |   |   |
|        |                                     |                     | 03/01/91      | ✓       |          | x |   |   |   | x | x | x | x | x | x |
|        |                                     |                     | 03/20/91      | ✓       |          |   |   |   |   | x | x | x | x | x | x |
|        |                                     |                     | 09/16/92      | ✓       | x        | x | x | x | x |   |   |   |   |   |   |
| 1      | BALTIMORE GAS & ELECTRIC COMPANY    | CALVERT CLIFFS 2    |               |         |          |   |   |   |   |   |   |   |   |   |   |
| 1      | BOSTON EDISON CO.                   | PILGRIM             | 08/01/87      |         |          |   |   |   |   | x | x | x | x |   | x |
|        |                                     |                     | 03/01/90      | ✓       | x        | x | x | x | x |   |   |   |   | x |   |
|        |                                     |                     | 09/18/91      | ✓       |          |   |   |   |   | x | x | x | x | x | x |
|        |                                     |                     | 11/17/93      | ✓       | x        | x | x | x | x |   |   |   |   |   |   |
| 1      | CONNECTICUT YANKEE ATOMIC POWER CO. | HADDAM NECK         | 01/01/90      | ✓       | x        | x | x | x | x |   |   |   |   |   |   |
|        |                                     |                     | 02/01/91      | ✓       |          |   |   |   |   | x | x | x | x | x | x |
| 1      | CONSOLIDATED EDISON CO.             | INDIAN POINT 2      | 10/01/90      | ✓       | x        | x | x | x | x |   |   |   |   |   |   |
|        |                                     |                     | 08/21/91      | ✓       |          |   |   |   |   | x | x | x | x | x | x |
| 1      | DUQUESNE LIGHT CO.                  | BEAVER VALLEY 1     | 05/01/88      |         |          |   |   |   |   | x | x |   |   |   | x |
|        |                                     |                     | 11/01/89      | ✓       | x        | x | x |   | x |   |   |   |   |   |   |
|        |                                     |                     | 06/17/92      | ✓       |          |   |   |   |   | x | x | x | x | x | x |
|        |                                     |                     | 11/18/93      | ✓       | x        | x | x | x | x |   |   |   |   |   |   |
| 1      | DUQUESNE LIGHT CO.                  | BEAVER VALLEY 2     |               |         |          |   |   |   |   |   |   |   |   |   |   |
| 1      | GPU NUCLEAR CORP.                   | OYSTER CREEK        | 08/01/90      | ✓       |          |   |   |   |   | x | x | x | x | x |   |
|        |                                     |                     | 09/01/90      | ✓       | x        | x | x | x | x |   |   |   |   |   | x |
| 1      | GPU NUCLEAR CORP.                   | THREE MILE ISLAND 1 | 02/01/89      | ✓       | x        | x | x | x | x |   |   |   |   |   | x |
|        |                                     |                     | 11/01/90      | ✓       |          | x |   |   |   | x | x | x | x |   | x |

Note: Operations: N, S, R, A, Q  
Maintenance/Technical: I, E, M, C, A, T

# HUMAN FACTORS INFORMATION SYSTEM

## HUMAN PERFORMANCE LER SUMMARY STATISTICS

### FOR ARKANSAS 1

REPORT FOR EVENTS AFTER 12/31/94 AND BEFORE / /

DATES FOUND: EARLIEST- 03/20/95

LATEST-09/26/95

TOTAL NUMBER OF HUMAN PERFORMANCE LERs: 7

#### PERSONNEL INVOLVED IN THESE EVENTS

|                          |   |     |
|--------------------------|---|-----|
| LICENSED OPERATOR:       | 1 | 14% |
| NON-LICENSED OPERATOR:   | 1 | 14% |
| I&C:                     | 0 | 0%  |
| ELECTRICAL:              | 1 | 14% |
| MECHANICAL:              | 1 | 14% |
| ENGINEER:                | 0 | 0%  |
| RADIOLOGICAL PROTECTION: | 0 | 0%  |
| CHEMISTRY:               | 2 | 29% |
| SECURITY:                | 0 | 0%  |
| OTHER:                   | 1 | 14% |

#### CONTRIBUTING FACTORS IN THESE EVENTS

|                          |   |     |
|--------------------------|---|-----|
| INADEQUATE TRAINING:     | 1 | 14% |
| IMPROPER TRAINING:       | 0 | 0%  |
| NO TRAINING:             | 0 | 0%  |
| PROCEDURES NOT FOLLOWED: | 0 | 0%  |
| PROCEDURES INADEQUATE:   | 3 | 43% |
| LACK OF PROCEDURES:      | 1 | 14% |
| PROCEDURES WRONG:        | 0 | 0%  |
| HUMAN SYSTEM INTERFACE   | 1 | 14% |
| WORK ENVIRONMENT:        | 0 | 0%  |
| VERBAL COMMUNICATIONS:   | 2 | 29% |
| WRITTEN COMMUNICATIONS:  | 2 | 29% |
| WORK SCHEDULE:           | 0 | 0%  |
| WORK LOAD:               | 0 | 0%  |
| MANAGEMENT/PLANNING:     | 2 | 29% |
| SHIFT TURNOVER:          | 1 | 14% |

#### TYPE OF TASK BEHAVIOR

|                  |   |     |
|------------------|---|-----|
| SKILL-BASED:     | 0 | 0%  |
| RULE-BASED:      | 4 | 57% |
| KNOWLEDGE-BASED: | 3 | 43% |

#### WORK TYPE INVOLVED IN THESE EVENTS

|                        |   |     |
|------------------------|---|-----|
| OPERATION:             | 4 | 57% |
| TESTING:               | 1 | 14% |
| CALIBRATION:           | 0 | 0%  |
| TROUBLESHOOTING:       | 0 | 0%  |
| MAINTENANCE:           | 0 | 0%  |
| ENGINEERING:           | 0 | 0%  |
| PROCEDURE DEVELOPMENT: | 1 | 14% |
| REFUELING:             | 0 | 0%  |
| MODIFICATION:          | 1 | 14% |
| OTHER:                 | 0 | 0%  |

#### TYPES OF COGNITIVE ERRORS WHICH APPEAR TO HAVE CONTRIBUTED TO THE EVENT

|                                    |   |     |
|------------------------------------|---|-----|
| ATTENTION DEFICIT:                 | 2 | 29% |
| MISINTERPRETATION OF INFORMATION:  | 1 | 14% |
| FORGETTING:                        | 0 | 0%  |
| FALSE ASSUMPTION ABOUT CONDITIONS: | 2 | 29% |
| POOR JUDGEMENT:                    | 1 | 14% |
| BOREDOM:                           | 0 | 0%  |
| OTHER:                             | 1 | 14% |

#### ACTION ERROR

|                     |   |     |
|---------------------|---|-----|
| UNTIMELY ACTION:    | 1 | 14% |
| OMISSION:           | 4 | 57% |
| OUT OF SEQUENCE:    | 0 | 0%  |
| WRONG ACTION:       | 2 | 29% |
| EXTRANEIOUS ACTION: | 0 | 0%  |