

United States  
Environmental  
Protection  
Agency

Office of Air Quality  
Planning and Standards  
Research Triangle Park, NC 27711

EPA-450/4-90-007D(R) ✓  
June 1992

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# USER'S GUIDE FOR THE URBAN AIRSHED MODEL

## Volume IV: User's Manual for the Emissions Preprocessor System 2.0

### Part B: Interface and Emission Display System





EPA-450/4-90-007D(R)

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Emissions Preprocessor System 2.0**

**Part B: Interface and  
Emission Display System**

**U.S. Environmental Protection Agency  
Region 5, Library (PL-12J)  
77 West Jackson Boulevard, 12th Floor  
Chicago, IL 60604-3590**

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## Contents

|  |      |
|--|------|
| Preface .....                                    | ii   |
| List of Figures and Tables .....                 | vi   |
| 1 INTRODUCTION .....                             | 1-1  |
| 2 OVERVIEW .....                                 | 2-1  |
| 2.1 Setup Module .....                           | 2-1  |
| 2.2 Graphic Module .....                         | 2-1  |
| 3 NAVIGATING THROUGH THE PROGRAMS .....          | 3-1  |
| 3.1 Starting the System .....                    | 3-1  |
| 3.2 Sequence of Interface Screens .....          | 3-1  |
| 3.3 Setup Module .....                           | 3-1  |
| 3.4 Graphics Module .....                        | 3-7  |
| 3.5 Interacting with Screens .....               | 3-7  |
| 3.5.1 Using Menus .....                          | 3-7  |
| 3.5.2 Colors on Input Screens .....              | 3-7  |
| 3.5.3 PF Keys .....                              | 3-8  |
| 3.5.4 Error Messages .....                       | 3-9  |
| 3.5.5 Error Correction .....                     | 3-9  |
| 3.5.6 Selection Fields and Selection Lists ..... | 3-9  |
| 3.5.7 Protected Fields .....                     | 3-10 |
| 3.5.8 Scrolling .....                            | 3-10 |
| 3.5.9 Field Values Saved and Recalled .....      | 3-10 |
| 3.5.10 On-line Help .....                        | 3-11 |
| 4 SCREEN REFERENCE .....                         | 4-1  |
| 4.1 Setup Module .....                           | 4-5  |
| 4.1.1 Define Region .....                        | 4-13 |
| 4.1.2 Define Episode/Species .....               | 4-32 |
| 4.1.3 Process Emissions .....                    | 4-35 |

|       |   |       |
|-------|---|-------|
| 4.2   | Graphics Module . . . . .                 | 4-97  |
| 4.2.1 | Data Extraction . . . . .                 | 4-98  |
| 4.2.2 | Graphics Selection . . . . .              | 4-110 |
| 4.2.3 | Statistical Graphics and Tables . . . . . | 4-113 |
| 4.2.4 | Temporal Graphics . . . . .               | 4-137 |
| 4.2.5 | Spatial Graphics . . . . .                | 4-156 |
| 4.3   | Graphics Catalog . . . . .                | 4-173 |
| 5     | SYSTEM INPUT . . . . .                    | 5-1   |
| 6     | SYSTEM OUTPUT . . . . .                   | 6-1   |
| 6.1   | Format . . . . .                          | 6-1   |
| 6.2   | SAS Graphics Catalog . . . . .            | 6-1   |

Appendix A: Formats for EPS Interface and Emission Display System Input Files

Appendix B: Formats for SAS Data Sets Extracted by the EPS Graphic Module

## **Preface**

This user's guide for the Urban Airshed Model (UAM) is divided into seven volumes as follows:

Volume I--User's Manual for UAM(CB-IV)

Volume II--User's Manual for the UAM(CB-IV) Modeling System (Preprocessors)

Volume III--User's Manual for the Diagnostic Wind Model

Volume IV--User's Manual for the Emissions Preprocessor System

Volume V--Description and Operation of the ROM-UAM Interface Program System

Volume VI--User's Manual for the Postprocessing System

Volume VII--User's Manual for the Performance Evaluation System (PES)

Volume I provides historical background on the model and describes in general the scientific basis for the model. For those users that already possess a UAM modeling data base or have prepared inputs without the use of the standard UAM preprocessors, this volume should serve as a self-sufficient guide to running the model.

Volume II describes the file formats and software for each of the standard UAM preprocessors that are part of the UAM modeling system. Included in this volume is an example problem that illustrates how inputs were created from measurement data for an application of the UAM in Atlanta.

Volume III is the user's manual for the Diagnostic Wind Model (DWM). This model is a stand-alone interpolative wind model that uses surface- and upper-level wind observations at selected sites within the modeling domain of interest to provide hourly, gridded, three-dimensional estimates of winds using objective techniques. It provides one means of formulating wind fields to the UAM.

Volume IV describes the UAM Emissions Preprocessor System 2.0 (EPS 2.0), which is used to process anthropogenic area and point source emissions for the UAM. Volume IV consists of two parts. Part A describes the core FORTRAN modules and utility programs of EPS 2.0 as well as the UAM Biogenic Emissions Inventory System (BEIS). Part B describes the EPS 2.0 Interface and Emission Display System.

Volume V describes the ROM-UAM interface program system, a software package that can be used to generate UAM input files from inputs and outputs provided by the EPA Regional Oxidant Model (ROM).

Volume VI is the user's manual for the UAM Postprocessing System (PPS). The UAMPPS is a data display and analysis tool for evaluating emission control strategies. After executing the UAM system, the results from one or more model runs may be graphically compared. The UAM PPS creates time-series plots, tile maps, bar charts, box plots, scatter plots, and quantile plots.

Volume VII is the user's manual for the Performance Evaluation System (PES). The UAM Performance Evaluation System (UAMPES) is a data display and analysis tool, which allows comparisons between UAM predictions and actual observations contained in the Aerometric Information Retrieval System. These comparisons allow users to evaluate UAM performance.

## 1 INTRODUCTION

The Interface and Emission Display System of the Urban Airshed Model Emissions Preprocessor System (EPS 2.0) can be used to set up the user input file (USERIN) and the control factor inputs to the core EPS 2.0 modules or to review emission inventories after the data have been processed by EPS 2.0. Although the core FORTRAN system may be run independent of the EPS 2.0 interface, the system provides easy-to-use tools for generating tables and graphics, which can be useful for quality control and reporting, and provides the user with an alternative method for preparing two of the input files required to run the core system. The EPS 2.0 interface does not provide the user with a tool for editing or creating all of the input files required by EPS 2.0 nor does it submit the job streams to run EPS 2.0.

This user's guide explains how to navigate through the menus of the Interface and Emission Display System and how to respond to the menus. A basic familiarity with computers is required of the user, but little knowledge of programming is required. Users who wish to create and modify the job stream files required to run EPS 2.0 will need to have a basic knowledge of the operating system, particularly techniques for editing files and executing job streams.

EPS 2.0 operates on an IBM mainframe computer at the U.S. Environmental Protection Agency's National Computer Center under MVS/XA with Time Sharing Option (TSO). Limited CLISTs and TSO-specific commands are used. EPS 2.0 operates in a SAS Version 6.06 environment using the SAS/AF software to access SAS and SAS/GRAPH software. The system can be installed on other computer platforms with a minimal conversion effort.

This user's guide is organized as follows. Section 2 provides an overview of the EPS 2.0 Interface and Emission Display System. Section 3 provides general information you will need to start and operate the system. Section 4 describes each screen in the Interface and Emission Display System and thus also serves as a tutorial for using the system. Section 5 provides an overview of the UAM output that serves as input to the system. Finally, Section 6 describes the various output products from the EPS 2.0 Interface and Emission Display System.



## **2 OVERVIEW**

The EPS Interface and Emission Display System comprises two independent programs that allow EPS users to (1) create or modify the input files necessary to run the EPS core modules and (2) perform statistical analyses of emissions data and display the results graphically. The two programs provide an efficient and user-friendly environment while maintaining a maximum degree of compatibility with other computer systems. Both programs feature self-explanatory menus, default values where appropriate, help for each entry field, and informative error messages.

### **2.1 INTERFACE PROGRAM**

The Setup module allows the user to easily enter or modify the USERIN or control factor file input to the EPS core modules. On entry to the Setup module the user is prompted for some initial information that is used to establish the default input and output files. The user then selects an option. A sequence of screens will guide the user in generating the inputs to the core modules.

The USERIN file consists of a number of sections, referred to as "packets". These packets define input parameters required by each of the core EPS 2.0 modules. There are two types of packets: global and module-specific. The global packets contain inputs that are required by more than one module. These inputs include episode specification, modeling domain definition, and counties to be included in the inventory. The module-specific packets contain input parameters required by one module.

The control factor file is input to the core module, CNTLEM, and consists of a series of up to 15 packets. Each packet contains the information required by CNTLEM to apply projection and control scenario factors.

### **2.2 EMISSION DISPLAY PROGRAM**

The Graphics module provides a means of graphically presenting information about an emission inventory to assist in model and policy analysis. The module creates the following types of graphics:

| <u>Data</u> | <u>Graphics</u>               |
|-------------|-------------------------------|
| Statistical | Bar charts and summary tables |
| Temporal    | Time series plots             |
| Spatial     | Shaded tile maps              |

Bar charts and summary tables are useful for immediate quantitative comparisons of emissions. Time series plots provide a means of portraying change in emissions over time. Shaded tile maps show emissions data for individual cells within a gridded modeling area. Examples of graphics, along with the types of information that may be displayed with each type of graphic, are shown on the following pages.

Graphics created by the EPS 2.0 interface may be viewed on a graphics terminal as they are created and saved in a SAS graphics library. This feature is useful for creating printed output and for composing multiple plots on a single page. Graphics libraries are explained in detail in Section 6.2.

## BATON ROUGE UAM EMISSIONS SPECIES TOTALS

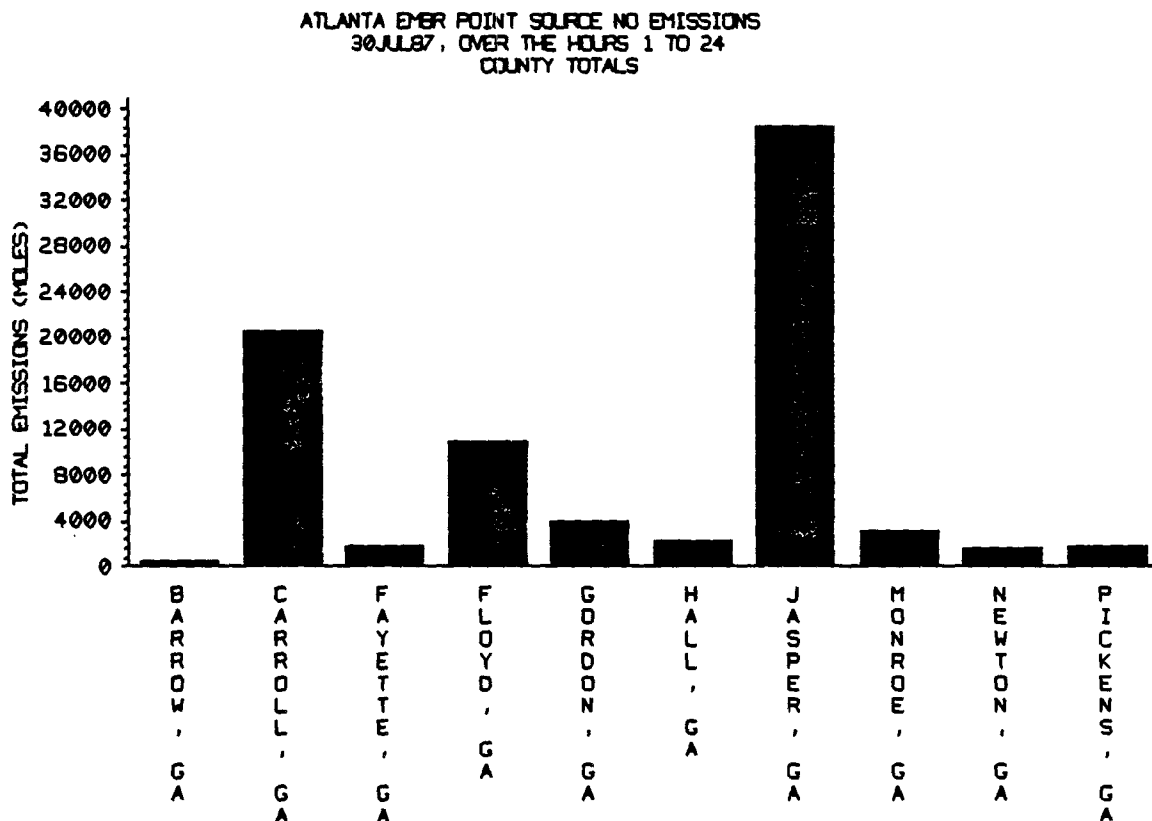
| Species | Moles      |
|---------|------------|
| ALD2    | 1678321.18 |
| CO      | 13945953.0 |
| FORM    | 121946.17  |
| ISOP    | 1468966.92 |
| NO      | 2322890.09 |
| NO2     | 256760.86  |
| SO2     | 1573081.67 |

Example summary table.

Summary tables provide a quick comparison of actual emissions among species. Two tables are automatically generated:

Total emissions for each species

Hourly emissions for each species (temporally allocated data only).

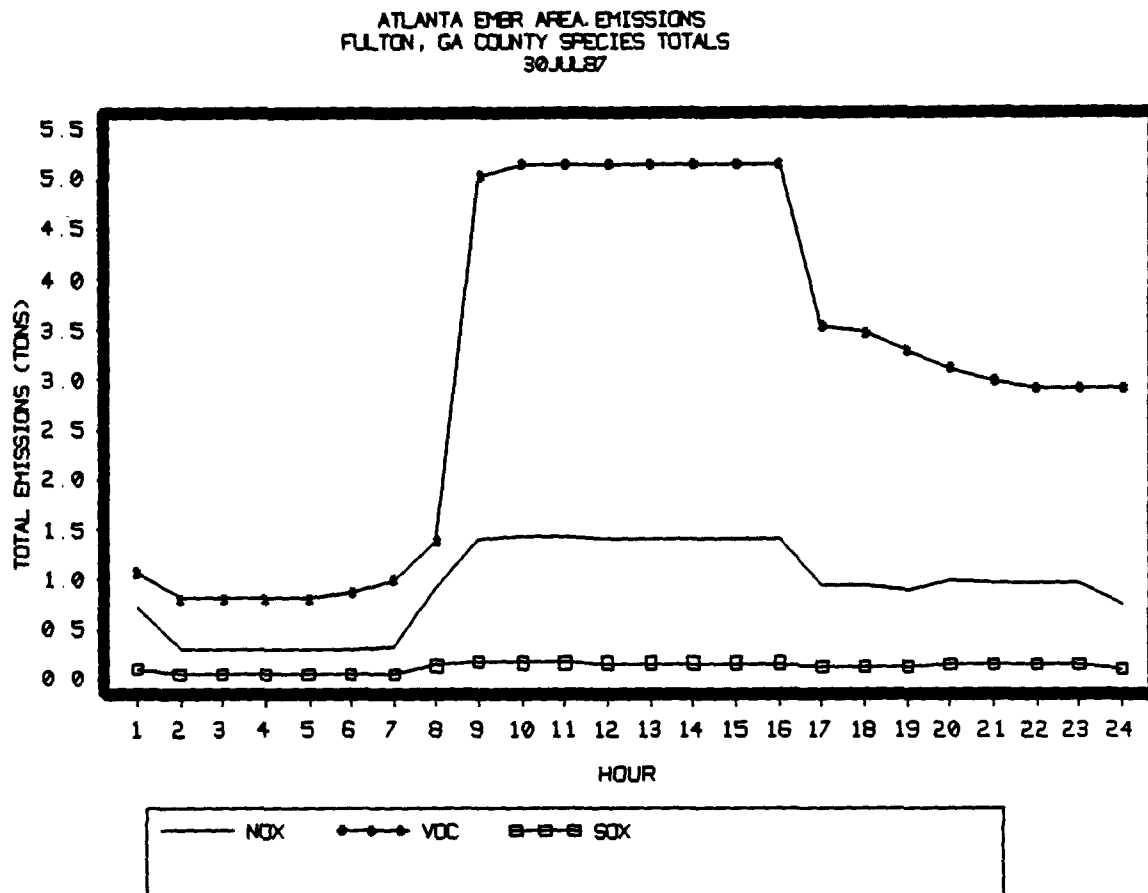


Example bar chart.

Bar charts provide comparative information on several emission species or source types. The height of the bars represents the relative emission total.

#### *Display Options*

- Total emissions for selected species for an entire domain
- Total emissions for source types for an entire domain
- Total emissions for selected species for a selected county
- Total emissions for source types for a selected county
- Total emissions for one species for selected counties



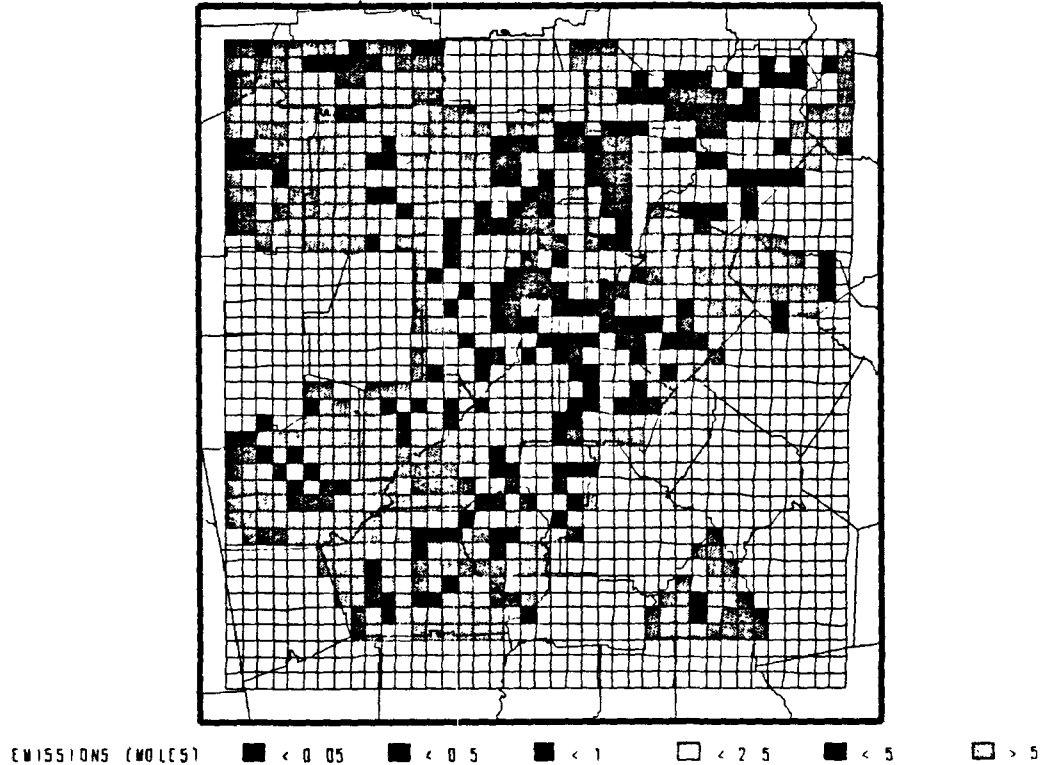
Example time series line plot.

Time series plots provide the user with a visual representation of the temporal distribution of the data. These plots created with the Graphics module can show data for up to 10 emission species or source types simultaneously. Lines may be displayed in different colors or patterns.

### Display Options

- Total emissions for species for an entire domain
- Total emissions for source types for an entire domain
- Total emissions for species for selected counties
- Total emissions for source types for a selected county

GEORGIA EMBR AREA NO EMISSIONS  
30JUL87, OVER THE HOURS OF 1 AND 24  
TOTAL FOR AREA SOURCES



### Example Shaded Tile Map

Shaded tile maps show total emissions for each grid cell in the modeling domain. Colors or patterns are assigned to ranges of values (class breaks), usually corresponding to an ascending or descending continuous scale, so that spatial patterns in the data are readily apparent (actual cell values are not shown). This type of graphic is appropriate for qualitative interpretations of the data, particularly since the choice of class breaks by the author of the graphic introduces some subjectivity to the presentation.

#### *Display Options*

Total emissions for all source types for a domain

Total emissions for one source type for a domain

### 3 NAVIGATING THROUGH THE PROGRAMS

This section provides basic information on starting the EPS Interface and Emission Display System and on the menu sequence. Common screen features are also explained.

#### 3.1 STARTING THE SYSTEM

The EPS Interface and Emission Display System is started by executing the EPS 2.0 CLIST from the TSO prompt. Type "EPS2" at the TSO prompt and press **ENTER**. There will be a short pause while the main menu is loaded. From the main menu you can enter the Setup or Graphics modules, go directly to the Graphics Catalog, access on-line help, or exit to TSO. Simply move the cursor to the desired option and press **ENTER**.

#### 3.2 SEQUENCE OF SCREENS

Figure 3-1 illustrates the order in which the screens of this system will be presented to you. These screens are always presented in the sequence shown. At any time you may press **PF3/PF15** to move to the previous screen or press **PF4/PF16** to return to the main menu (see Section 3.5.3 for an explanation of **PF** keys).

At appropriate steps you will be presented with the Termination Selection screen, where you may choose to exit the current option or perform another step. Exiting any of the selected modules will return you to the main menu.

#### 3.3 SETUP MODULE

The Setup module allows you to enter and change input files required to execute the core FORTRAN modules in EPS 2.0. The sequence of screens for this module is shown on the second page of Figure 3-1.

The introductory screen provides you with information regarding the function options in the module. Pressing **ENTER** will display screens for defining the default pathname and interface function options. At any time you may press **PF3/PF15** to return to the previous screen or press **PF4/PF16** to jump to the main menu.

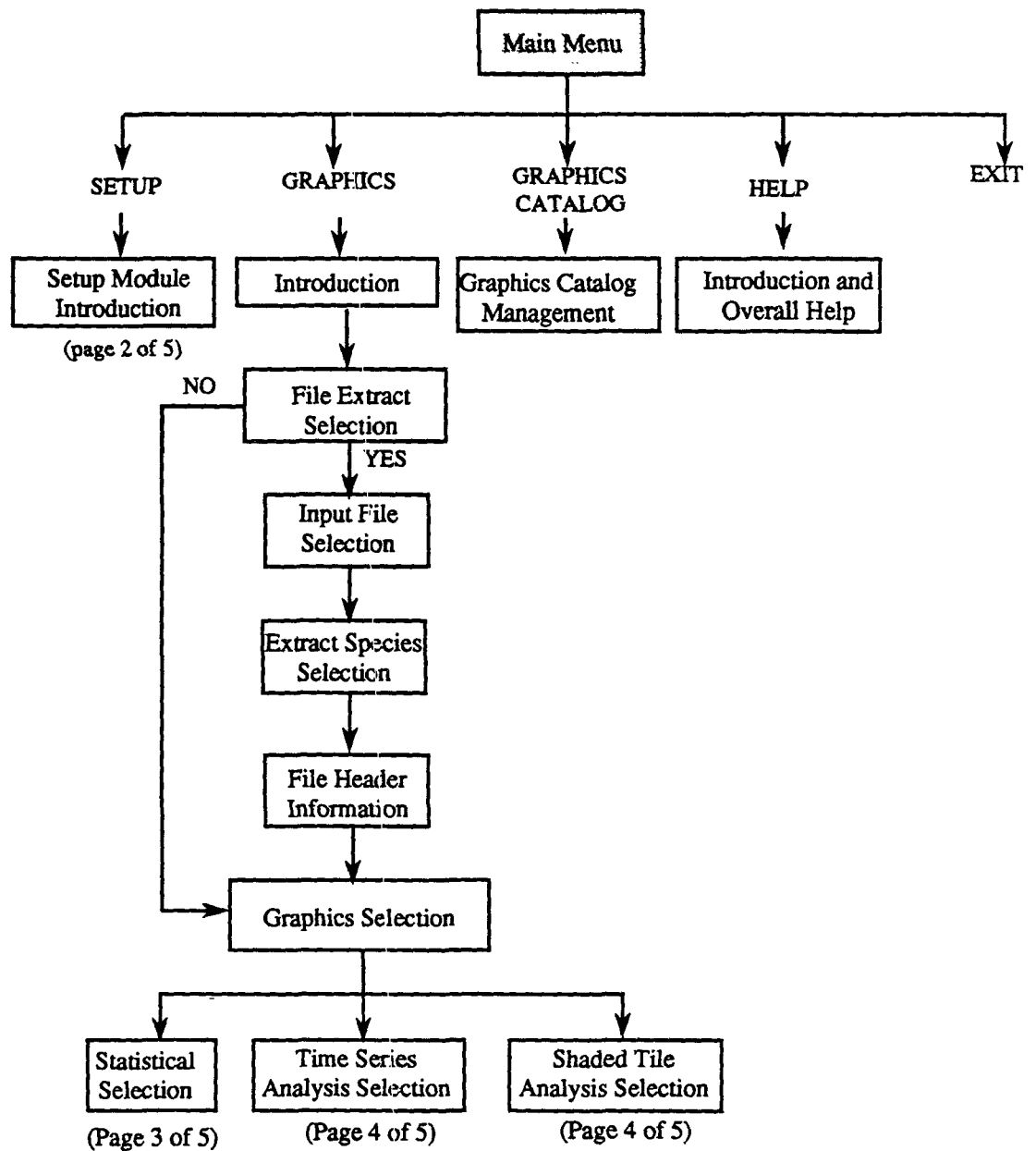


FIGURE 3-1. Flow diagram of the EPS 2.0 interface.

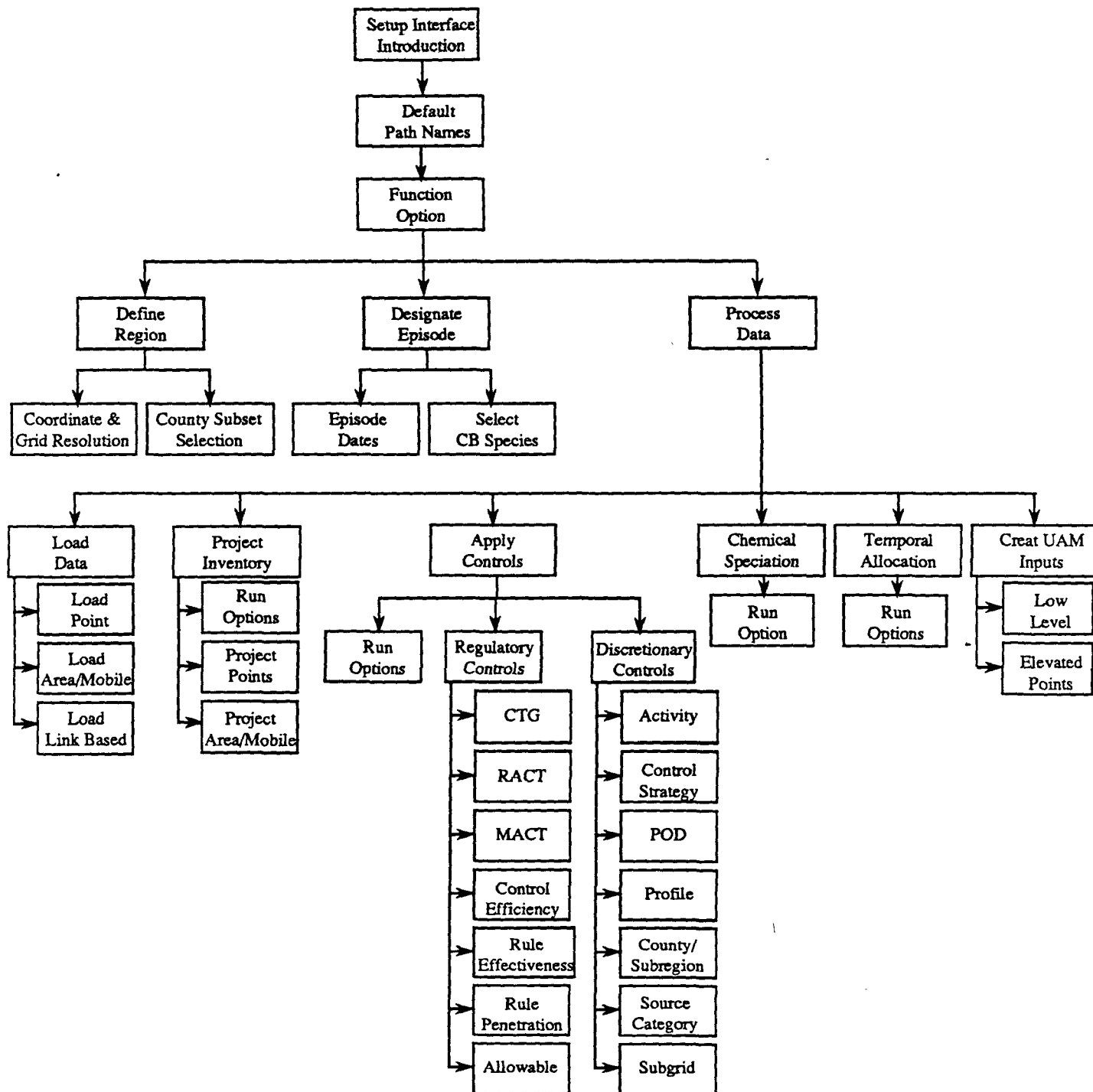


FIGURE 3-1. Page two.

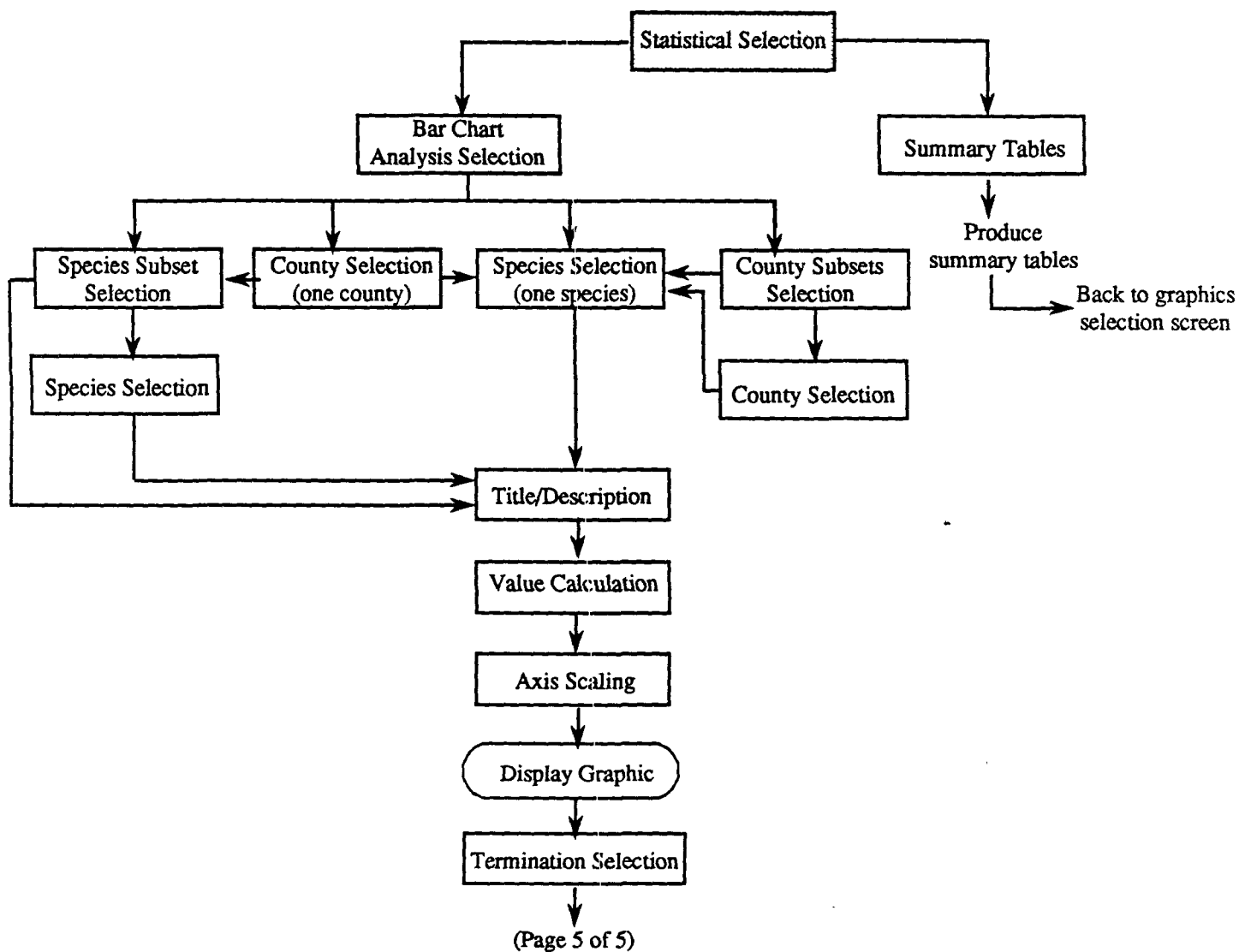
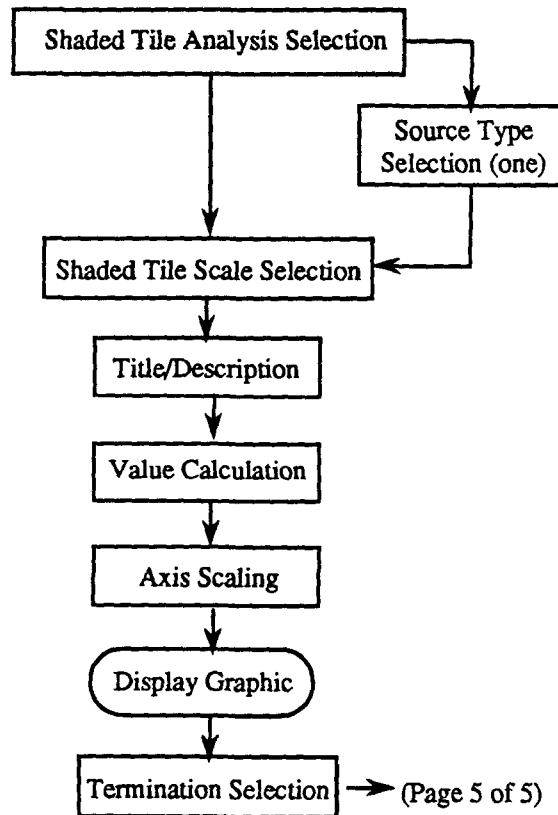
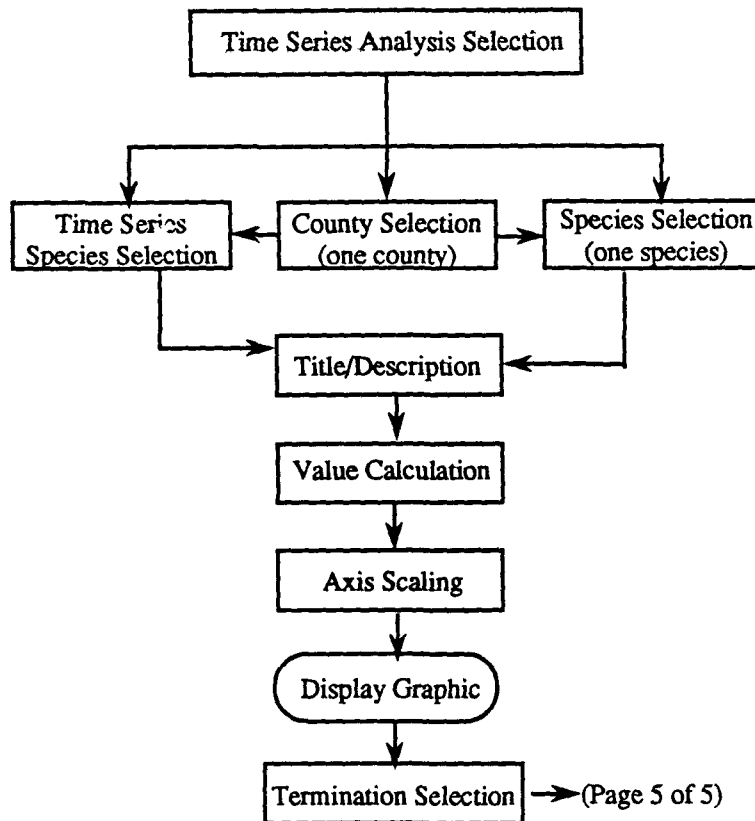


FIGURE 3-1. Page three.



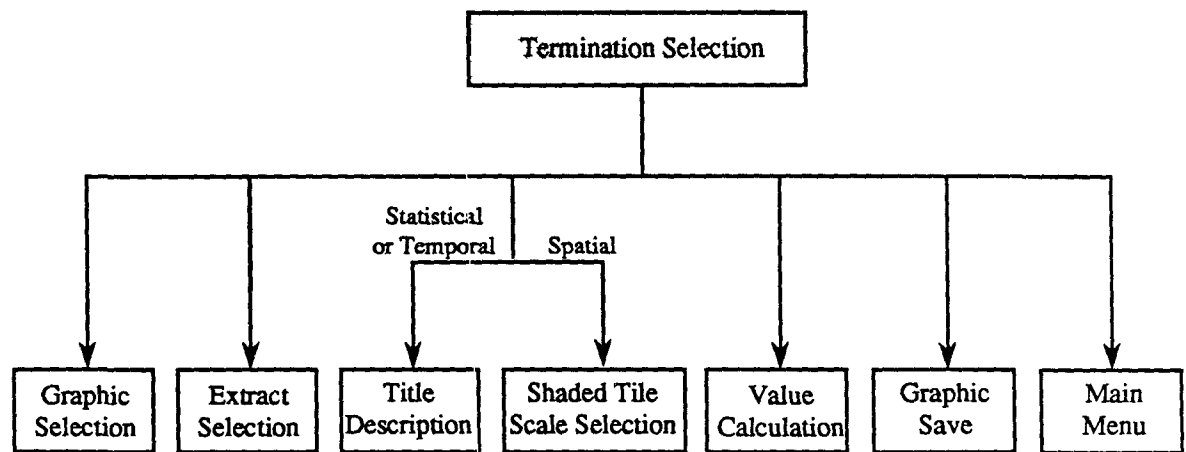


FIGURE 3-1. Page five.

### 3.4 GRAPHICS MODULE

The sequence of the screens in the Graphics module is shown in Figure 3-1 (pages 1, 3, 4, and 5). The specific screens presented will depend on which type of graphic you select in the Graphic Selection screen. At any time within the Graphics module you may press **PF3/PF15** to move to the previous screen or press **PF4/PF16** to jump to the main menu.

After a graphic has been generated, you will be presented with the Termination Selection screen, where you can choose to return to the main menu, save the graphic, or generate another graphic. From the main menu you may exit the system and return to the TSO prompt by placing the cursor on the exit block and pressing **ENTER**.

If you choose to save a graphic you created, the Graphics Catalog Generation screen will be displayed followed by the screen for the SAS procedure **GREPLAY**. The only time the Save Graphic screen will be displayed is when you select the save option on the Termination Selection screen. After filling out the requested information, the graphic is saved and the Termination Selection screen is redisplayed.

### 3.5 INTERACTING WITH SCREENS

The information presented here applies to most screens in the EPS Interface and Emission Display System. The actual display or input procedures may vary slightly and depend on the type of terminal being used.

#### 3.5.1 Using Menus

Each menu that appears on your terminal screen prompts you for certain information. Press **TAB** to move the cursor to the data entry fields. After you have supplied the requested information, press **ENTER**. If a screen consists of more than one page, you can use **PF20** and **PF19** to move forward and backward between screens. The menu program checks the information that you have entered for errors and inconsistencies and reports any problems it finds. Correct any problems and again press **ENTER** and the next menu will appear.

To override any defaults, type over the entry in a field and eliminate any extraneous characters by using either the space bar or the **ERASE**, **EOF**, or **DEL** keys.

Entering **'?'** in the first column of any field will invoke either a standard SAS message or list of possible selections. See Section 3.5.6 (Selection Fields and Selection Lists) for information on the use of **'?'** in these fields.

### 3.5.2 Colors on Input Screens

If you are using a terminal that supports IBM color graphics, you may notice that different types of information are displayed on the screens in different colors.

The text describing a given field is displayed in cyan.

If the field is protected (i.e., it is not intended to be updated but is merely designed to supply information to you), the color of the field will be pink.

Fields that require a response from you are displayed in green.

System error or informational messages are displayed in red.

If invalid data is input to a field and the program detects the error, the field will be displayed in red and reverse video.

Monochrome terminals will most likely display fields in reverse video when errors are detected.

### 3.5.3 PF Keys

TABLE 3-1. PF key functions for EPS menus.

| PF Key                   | Command  | Assigned Function   |
|--------------------------|----------|---|
| PF1 or PF13 <sup>a</sup> | HELP     | Provides context-sensitive information on how to proceed or indicates what information is required. |
| PF3 or PF15 <sup>a</sup> | CANCEL   | Terminates the current menu without taking any action and returns to the previous menu.             |
| PF4 or PF16 <sup>a</sup> | ABORT    | Terminates the current menu without taking any action and returns to the main menu.                 |
| PF7 or PF19 <sup>b</sup> | BACKWARD | Scrolls toward the beginning of a list of items.  |
| PF8 or PF20 <sup>b</sup> | FORWARD  | Scrolls toward the end of a list of items.  |

<sup>a</sup> These keys are available for all menus except the main menu and option screens.

<sup>b</sup> These keys are available for menus that are too long to fit on one screen.

### 3.5.4 Error Messages

All EPS 2.0 interface menus have error windows that notify you when something is wrong. If you enter invalid or inconsistent data in a field, a window will open with a message after you press **ENTER**. In addition to the error message, the message window will instruct you to press **PF15** to continue. After you have read the message and pressed **PF15**, the window will close and the field that is in error will be highlighted (red on color terminals). The cursor will automatically be placed on the appropriate field for easy data correction.

### 3.5.5 Error Correction

If there are multiple errors, the error message describes only the first one and the cursor is positioned on that field. You should change that field to eliminate the error. If you determine that there are other fields in error, it is most efficient to change them also, before you press **ENTER**. If you are not sure whether or not more fields are in error, correct the field for which the error message applies and press **ENTER**. If there is an additional error, an error message applicable to the next highlighted field will appear, and you can correct it. If an error involves two or more fields, you may need to decide which one is causing the error.

### 3.5.6 Selection Fields and Selection Lists

Some menus display a table of values from which you can choose. There are two types of these menus. The first allows you to choose any number of selections. This menu contains a selection field and the list of values. Press **TAB** to move the cursor from one selection field to the next. Enter an "S" in any field that you want to select. The list of values may be more than one screen long. If so, scroll down the list by pressing **PF20** or up the list by pressing **PF19**. If you wish to change a selection, simply press the space bar or the **DEL** key to remove the "S" from a field. After you have selected items from the list, press **PF3/PF15** to move to the next menu.

The second type of selection menu allows you to choose only one value from a list. Use your down arrow key (**↓**) and up arrow key (**↑**) to move the cursor up and down the list. Do *not* use the **TAB** key, since the fields are protected. (See Section 3.5.7 on protected fields). Place your cursor on the value you want to select and press **ENTER**. The value will be highlighted. If the list exceeds one screen, press **PF20** to scroll down the list or **PF19** to scroll up the list. If you wish to change your selection, place the cursor on the highlighted value and press **ENTER** to unhighlight the value. Then move the cursor to select another value. After you have selected a value, press **PF3/PF15** to move to the next menu.

Some menus contain fields that are linked to a list of valid values from which one value may be chosen for that field. Whenever these "Selection Lists" are available for a field, the menu will inform you of the list's existence. Enter "?" in the field and press **ENTER** to display the list. A window with the list will open on top of the current menu and the cursor will be placed on the first item in the list. Press **TAB** to move down the list on the screen; if a list exceeds one screen, press **PF19** (up) or **PF20** (down) to move between screens. Press **ENTER** to transfer the selected value to the appropriate screen field. Once the list value is transferred to the related data field, press **ENTER** to process the menu selections and move on to the next menu.

### **3.5.7 Protected Fields**

Sections of the screen skipped over when you press **TAB** are protected; you cannot alter them. If you move the cursor with cursor-movement keys to a protected area on the screen and attempt to enter data, the terminal keyboard locks and you must press **RESET** to regain use of it. Menu titles, instructions, and "white space" are examples of protected areas. Sometimes an area of a menu that looks like a data field with an initial or default value is really a protected field. If the menu program determines that only one value is valid for the field, the computer "fills in" that value for you and makes the field protected. If you can move the cursor to a field, it has an initial value that can be changed. If you cannot, the field is protected.

### **3.5.8 Scrolling**

Some menus have a list of items to choose from. If the entire list does not fit on the screen, you can scroll to see more items. Imagine that part of the menu is a window through which you see the list of items. Scrolling forward is like sliding the window down, toward the end of the list. Scrolling backward is like sliding the window up, toward the beginning of the list. The window scrolls by the number of lines visible, until it reaches the end or beginning of the list. If the beginning of a list is displayed, scrolling backward has no effect; if the end of the list is displayed, scrolling forward has no effect. The message "end of file" or "at bottom" or "at top" may appear in the message area, however.

### **3.5.9 Field Values Saved and Recalled**

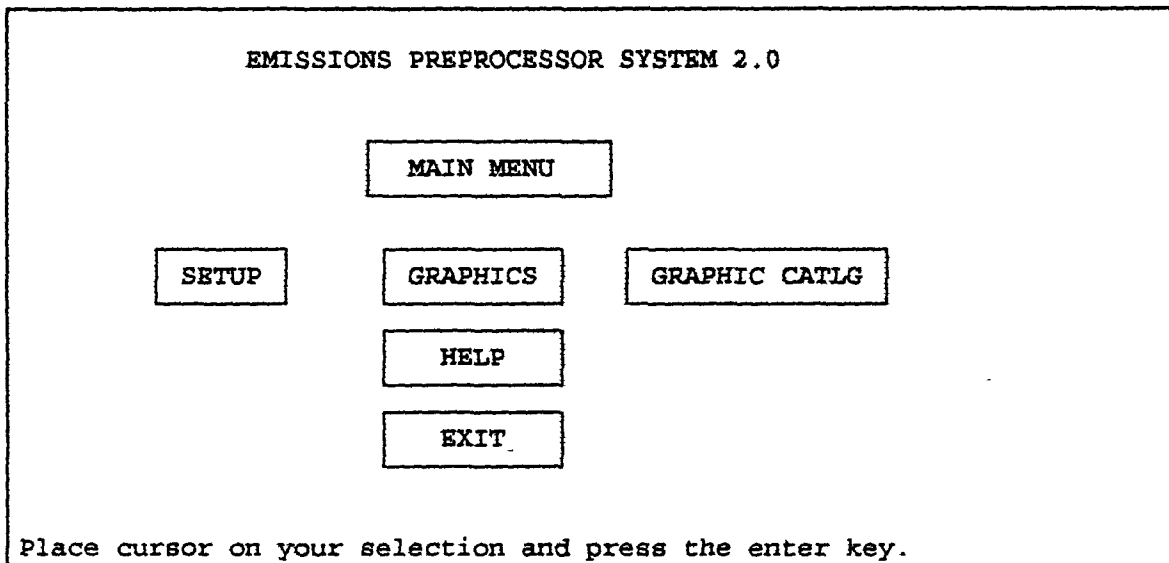
The first time you use a menu, the fields in which you can enter values are blank or they have default values chosen by the menu program. Underlines indicate the locations and sizes of blank fields. When you leave a particular menu, the EPS 2.0 interface saves the values of all data fields, but not the selections you make from a scrollable list. The next time you use the same menu, the values you entered (or the defaults you accepted) are displayed as the initial values. If you want to use the same values again, you do not have to reenter them. To override any defaults, type over the entry in the field and eliminate any extraneous characters by using either the space bar or the **ERASE EOF** or **DEL** keys.

### **3.5.10 On-line Help**

On-line help is available from most screen fields. To access on-line help, simply place the cursor on the field for which help is desired and press **PF1/PF13**. A window with an explanation of the field will open. The help window may be one or more screens depending on the complexity of the information. From the help window, press **PF3/PF15** to return to the application screen.

## 4 SCREEN REFERENCE

This section presents all the screens in the EPS Interface and Emissions Display System in the order that they appear. This section thus walks the user through the system and provides a complete description of each successive screen.



From the main menu screen you can enter the Setup or Graphics modules, go directly to a previously defined graphics catalog, access on-line help, or exit the UAM EPS system to the Time Sharing Option (TSO) operating system. To make a choice, move the cursor to the choice and press ENTER. You can return to this menu from any other menu by pressing PF4 or PF16.

Each option on the main menu screen is supported by a series of screens. For example, you would encounter the following screens when creating a time series line plot after choosing the Graphic option:

- Time Series Analysis Selection
- Time Series Species Selection
- Graphic Title/Description Specification
- Value Calculation Message
- Axis Scaling
- Termination Selection

Some options in different subprograms have the same screen. For example, the same screens for Graphic Title/Description Specification, Value Calculation Message, and Termination Selection appear in all three graphics subprograms (statistical, temporal, and spatial graphics). Such screens are illustrated in this section each time they appear in sequence. Although this may appear to be redundant, it serves the purpose of presenting a complete sequence of screens for each subprogram. Example responses are shown on several of the screens illustrated in this section.

The description of each screen includes a screen image showing what you will see when running the EPS 2.0 interface and emission display system. Below each screen image is a brief summary of the purpose of the screen, followed by a detailed set of instructions to assist you in properly filling in all fields on the screen. Following the instructions is a list of error messages that you may encounter, along with instructions on how to fix each error.

Table 4-1 lists all the screens for the Setup and Graphics modules.

TABLE 4-1a. List of screens in the Setup module.

| Section of<br>User's Guide | Module                   | Screen  | Screen<br>Number |
|----------------------------|--------------------------|---|------------------|
| <b>4.1</b>                 | <b>Setup</b>             | Setup Module                                    | 1.0              |
|                            |                          | Default Pathnames Setup                         | 1.1              |
|                            |                          | Input Path and Filename Setup                   | 1.2              |
|                            |                          | Output Path and Filename Setup                  | 1.3              |
|                            |                          | Interface Function Options                      | 1.4              |
| <b>4.1.1</b>               | <b>Define Region</b>     | Define Region                                   | 1.41             |
|                            |                          | Region Definition                               | 1.411            |
|                            |                          | UAMREGN Packet                                  | 1.411.1          |
|                            |                          | County Subset Selection                         | 1.412            |
|                            |                          | U.S. COUNTY Packet                              | 1.412.1          |
|                            |                          | County Selection                                | 1.412.2          |
|                            |                          | COUNTY Packet                                   | 1.412.21         |
|                            |                          | Preexisting County Subset                       | 1.412.3          |
|                            |                          | COUNTY Packet                                   | 1.412.31         |
|                            |                          |   |                  |
| <b>4.1.2</b>               | <b>Define Episode</b>    | Designate Modeling Episode<br>and CB-IV Species | 1.42             |
|                            |                          | Select EPISODE (1 of 2)                         | 1.421.1          |
|                            |                          | Select CB-IV Species (2 of 2)                   | 1.421.2          |
| <b>4.1.3</b>               | <b>Process Emissions</b> | Process Emission Data                           | 1.43             |

Continued

TABLE 4-1a. Continued.

|         |                         |           |
|---------|-------------------------|-----------|
| 4.1.3.1 | Load Data               | 1.431     |
|         | PREPNT Packet           | 1.431.1   |
|         | PREPNT Packet           | 1.431.11  |
|         | PREAM Packet            | 1.431.2   |
|         | PREAM Packet            | 1.431.21  |
| 4.1.3.2 | LBASE Packet            | 1.431.3   |
|         | LBASE Packet            | 1.431.31  |
|         | Project Inventory       | 1.432     |
|         | Grow to New Year        | 1.432.1   |
|         | CNTLEM Packet           | 1.432.11  |
| 4.1.3.3 | CNTLEM Packet           | 1.432.2   |
|         | Control Factors--Select |           |
|         | Projection Packet       |           |
|         | PROJECT AMS Packet      | 1.432.21  |
|         | PROJECT AMS Packet      | 1.432.211 |
| 4.1.3.3 | PROJECT PTS Packet      | 1.432.22  |
|         | PROJECT PTS Packet      | 1.432.221 |
|         | Apply Controls          | 1.433     |
|         | CNTLEM Packet           | 1.433.1   |
|         | CNTLEM Packet           | 1.433.11  |
| 4.1.3.3 | Regulatory Controls     | 1.433.2   |
|         | CTG Packet              | 1.433.21  |
|         | CTG Packet              | 1.433.211 |
|         | RACT Packet             | 1.433.22  |
|         | RACT Packet             | 1.433.221 |

Continued

TABLE 4-1a. Continued.

|                           |           |
|---------------------------|-----------|
| MACT Packet               | 1.433.23  |
| MACT Packet               | 1.433.231 |
| CONTROL EFFICIENCY Packet | 1.433.24  |
| CONTROL EFFICIENCY Packet | 1.433.241 |
| RULE EFFECTIVENESS Packet | 1.433.25  |
| RULE EFFECTIVENESS Packet | 1.433.251 |
| RULE PENETRATION Packet   | 1.433.26  |
| RULE PENETRATION Packet   | 1.433.261 |
| ALLOWABLE Packet          | 1.433.27  |
| ALLOWABLE Packet          | 1.433.271 |
| Discretionary Controls    | 1.433.3   |
| ACTIVITY CODE Packet      | 1.433.31  |
| ACTIVITY CODE Packet      | 1.433.311 |
| CONTROL CODE Packet       | 1.433.32  |
| CONTROL CODE Packet       | 1.433.321 |
| POD CODE Packet           | 1.433.33  |
| POD CODE Packet           | 1.433.331 |
| PROFILE CODE Packet       | 1.433.34  |
| PROFILE CODE Packet       | 1.433.341 |
| FIPS CODE Packet          | 1.433.35  |
| FIPS CODE Packet          | 1.433.351 |
| SOURCE CATEGORY Packet    | 1.433.36  |
| SOURCE CATEGORY Packet    | 1.433.361 |
| SUBGRID Packet            | 1.433.37  |
| SUBGRID Packet            | 1.433.371 |

TABLE 4-1a. Concluded.

|                |                            |   |   |
|----------------|----------------------------|---|---|
| <b>4.1.3.4</b> | <b>Chemically Speciate</b> | CHMSPL Packet<br>CHMSPL Packet  | 1.434<br>1.434.1                                    |
| <b>4.1.3.5</b> | <b>Temporally Allocate</b> | TMPRL Packet<br>TMPRL Packet  | 1.435<br>1.435.1                                    |
| <b>4.1.3.6</b> | <b>CREATE UAM Inputs</b>   | Create UAM Inputs<br>GRDEM Packet<br>GRDEM Packet<br>PSTPNT Packet<br>PSTPNT Packet | 1.436<br>1.436.1<br>1.436.11<br>1.436.2<br>1.436.21 |

TABLE 4-1b. List of screens in the Graphics module.

| Section of<br>User's Guide | Module                                     | Screen                                   | Screen<br>Number* |
|----------------------------|--|--|-------------------|
| <b>4.2</b>                 | <b>Graphics</b>                            | Introduction                             |                   |
| <b>4.2.1</b>               | <b>Data Extraction</b>                     | File Extract Selection                   | 1.0               |
|                            |  | File Selection                           | 1.1               |
|                            |  | Species Extract Selection                | 1.2               |
|                            |  | File Header Information                  | 1.3               |
| <b>4.2.2</b>               | <b>Graphics Selection</b>                  | Graphic Selection                        | 2.0               |
| <b>4.2.3</b>               | <b>Statistical Graphics<br/>and Tables</b> | Statistical Graphic Selection            | 2.1               |
|                            |  | Bar Chart Analysis Selection             | 2.1.1             |
|                            |  | Summary Tables                           | 2.1.2             |
|                            |  | County/Species Subset Selection          |                   |
|                            |  | County/Species Selection List            |                   |
|                            |  | County/Species (one) Selection           |                   |
|                            |  | Graphics Title/Description Specification | 2.4               |
|                            |  | Value Calculation Message                | 2.5               |
|                            |  | Axis Scaling                             | 2.5.1             |
|                            |  | Termination Selection                    | 2.6               |
|                            |  | Save Graphic                             | 2.7               |

Continued.

TABLE 4-1b. Concluded.

| Section of<br>User's Guide | Module                   | Screen                                  | Screen<br>Number* |
|----------------------------|--------------------------|---|-------------------|
| <b>4.2.4</b>               | <b>Temporal Graphics</b> | Time Series Analysis Selection          | 2.2               |
|                            |                          | Time Series Species Selection           |                   |
|                            |                          | County/Species (one) Selection          | 2.4               |
|                            |                          | Graphic Title/Description Specification | 2.5               |
|                            |                          | Value Calculation Message               | 2.5.1             |
|                            |                          | Axis Scaling                            | 2.6               |
|                            |                          | Termination Selection                   | 2.7               |
|                            |                          | Save Graphics                           |                   |
| <b>4.2.5</b>               | <b>Spatial Graphics</b>  | Shaded Tile Analysis Selection          | 2.3               |
|                            |                          | Source Type Selection List              |                   |
|                            |                          | Shaded Tile Scale Selection             | 2.3.1             |
|                            |                          | Graphic Title/Description Specification | 2.4               |
|                            |                          | Value Calculation Message               | 2.5               |
|                            |                          | Termination Selection                   | 2.6               |
|                            |                          | Save Graphic                            | 2.7               |
| <b>4.3</b>                 | <b>Graphics Catalog</b>  | Graphics Catalog Management Menu        | 3.0               |

\* Numbered screens appear in a prescribed sequence in the program. Unnumbered screens can be accessed at different points in the program.

## 4.1 SETUP MODULE

The Setup module provides the user with a series of menus that prompt for the inputs required for the selected EPS 2.0 processing steps. This module will create the packets for inclusion in the USERIN and Control Factors files. These files are only two of the many input files required by the core EPS 2.0. For further information on inputs needed for EPS 2.0 see the *User's Guide for the Urban Airshed Model, Volume IV: User's Manual for the Emissions Preprocessor System 2.0, Part A: Core FORTRAN System*.

The Setup module begins with an introduction screen followed by screens that allow you to set up the default pathnames for the input and output USERIN and control factors files. After the default pathnames are established you are asked to select from the following options:

- Define region
- Specify episode and Carbon-Bond Mechanism (CBM) species
- Setup USERIN packets for processing

Choosing any of these options will lead you through a series of screens for creating the EPS input packets. Each packet you create or modify will be written to the output file you specify.

The following pages present all of the Setup module menus in order of execution. Note that the number that appears in the upper left corner of each screen indicates the sequence position of that screen. The more complex the number, the further into the tree structure you have progressed.

### ► Example

Screen 1.4 (Interface Function Options) offers you three options: (1) Define Region, (2) Designate Modeling Episode and CBM species, or (3) Process Emission Data. Choosing these options will take you to screens 1.41 through 1.43. For example, choosing option 3 (Process Emission Data) will take you to screen 1.43, which offers you six options for processing data. Selecting these options produces screens 1.431 through 1.436. If, for example, you select 'Load Data' in screen 1.43, you will proceed to screen 1.431.

### Important Note

Before attempting to execute the Setup module, see the note for Screen 1.3 (Output Path and Filename Setup). To properly execute the Setup module, the instructions within the note *must* be followed.

## Setup Interface System

1.0

## EPS 2.0: Setup Module

Welcome to the EPS 2.0 Setup Module. This module assists the user in a variety of function options associated with creating the USERIN and control factor file used as inputs for processing of emission inventory data for UAM modeling.

These functions include:

- Defining Modeling Region
- Designating Modeling Episode and Carbon Bond IV (CBM-IV) Species
- Preparing USERIN Packets for Data Processing
- Preparing the Control Factor File

Please press Enter when done.

PF1/PF13=Help

PF4/PF16=Main Menu

The EPS Setup module begins with an introduction screen. The screen tells you the general purpose of this module and what options are available.

**Instructions**

Press ENTER to continue. Press PF4 or PF16 to abort the setup module and return to the main menu.

Press PF1 or PF13 for a brief description of the EPS 2.0 Setup module. Press PF3 to return to the introductory screen.

**Error Messages**

None.

## Setup Default Pathnames

```

1.1

                EPS 2.0:  Setup Default Pathnames

Please enter the requested information below, then press Enter:

    User ID, Acct#: _____
    Region Code:    _____
    Scenario Code:  _____

                Please press Enter when done.

PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu

```

The information entered on this menu will be used to establish the default pathname used to access existing files or create a new file.

*User ID (Acct#):* Any set of valid alphanumeric characters that identify the owner or current user. Maximum number of characters is 8. Standard for the IBM 3090 system is a three-character user ID followed by a four-character account number.

*Region code:* Any set of valid alphanumeric characters that identify a modeling region. Maximum number of characters is 8. Examples of region codes are:

ATL - Atlanta, GA  
DFW - Dallas-Fort Worth, TX

BTR - Baton Rouge, LA  
HSTN - Houston, TX

*Scenario code:* Any set of valid alphanumeric characters that identify an emissions inventory. Maximum number of characters is 8. Some example scenario codes are

B90 - Base 1990

CS01 - Control Strategy 01

For example, the file name on the IBM 3090 system might be

*uidacct.UAM.EPS.ATL.B90.INP(USERIN)*

### Instructions

After filling in a field, press **TAB** to move to the next field. When you have filled all fields, press **ENTER** to proceed to the next menu. For help, press **PF1/PF13** and a help message screen will appear. The information contained in the help screen is a summary of the information given above. To return to the previous screen, press **PF15**.

### Error Messages

All fields must be filled for this screen.

Press PF15 to Continue

PLEASE FILL ALL FIELDS

## Input Path and Filename Setup

1.2

## EPS 2.0: Input Path and Filename Setup

On each line below enter one of the following:

- 1) The complete root path of the files you would like to use. This path will be the default in upcoming menus. This option is best if you will be reading in data from several files.
- 2) The complete path and filename of the single file you would like to use. This file will be the default in upcoming menus. This option is best if you will be reading in only one file.

Please press Enter when done.

Input USERIN: \_\_\_\_\_

Input CONTROL: \_\_\_\_\_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

Default pathnames that appear on this screen are created from the inputs entered on screen 1.1 (Setup Default Pathnames). You may continue on to the next screen or change the default path/filenames shown here. This default created by the EPS 2.0 Interface will specify the default filename. See the example under option 2. The path/filenames included on this screen will be used as the default files to be accessed in retrieving USERIN or control factors packet data for subsequent data input screens. At each retrieval point you will be given the opportunity to specify an alternate path/filename.

On each retrieval the indicated file will be searched for the desired packet. If the packet exists in the file, the subsequent screen will appear with the data. If the packet does not exist in the file, the subsequent screen will appear with default values or empty data fields.

*Option 1:* The input path name will form the default root for the file name, i.e., only the final file name will need to be entered. The user will need to specify the individual files at each step.

*< uidacct > .UAM.EPS.ATL.B90.INP. < filename >*

*Option 2:* The entire file name is entered, particularly if only one file is to be accessed. However, should the user wish to use a different file, the file name may be changed.

*Option 2:* The entire file name is entered, particularly if only one file is to be accessed. However, should the user wish to use a different file, the file name may be changed.

`<uidacct>.UAM.EPS.ATL.B90.INP(USERIN)`

### **Instructions**

To change the path and filename established by the interface, press **TAB** to move to the field and type over the string to change it. Press **ENTER** when done to proceed to the next screen.

### **Error Messages**

Both fields must be filled and the paths and files specified must exist.

Press PF15 to Continue

PLEASE FILL ALL FIELDS

## Output Path and Filename Setup

1.3

## EPS 2.0: Output Path and Filename Setup

Please enter the complete path and filenames of the output USERIN and CONTROL factor files you would like to create. All data will be written to these files.

Output USERIN: USERIN.UAM.EPS.INP(USERIN)  
Output CONTROL: USERIN.UAM.EPS.INP(CONTROL)

Please enter the pathname only of a location where SAS may temporarily place text files. Temporary files will be written to filenames beginning with the pathname below, and can be deleted at the end of this session. Please be sure to include the final period '.' in the specified pathname.

Pathname for temporary files: USERIN.UAM.EPS.TEMP.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

Default pathnames that appear on this screen are created from the inputs entered on screen 1.1 (Setup Default Pathnames). You may continue on to the next screen or change the default path/filenames shown here. The indicated files are the files you will be creating. All newly created or modified packets will be written to these files. These files can be the same as the designated input files; however, you should be aware that the original file will be overwritten.

**Important Note**

The program will create the following temporary files and place them in the temporary file directory you specified in screen 1.3:

|              |             |             |            |
|--------------|-------------|-------------|------------|
| COUNTYS.WORK | DATE.DAT    | NEWREST.DAT | REST.DAT   |
| SPECIES.DAT  | USERIN.NMOD | USERIN.EPIS | PACKET.DAT |

For example, if you specified the pathname displayed in screen 1.3 above, the program would create eight files as follows:

USERIN.UAM.EPS.TEMP.COUNTYS.WORK  
USERIN.UAM.EPS.TEMP.SPECIES.DAT

and so on.

## 4.1 SETUP

Use the following specifications for the USERIN and control factor files.

Record length = 200  
Block size = 20000  
Record format = fixed block

If your input USERIN and control factor files do not have these specifications, do not specify these files as output USERIN and control factor files. Instead, create new output USERIN and control factor files using the specifications above.

When finished with the Setup module, the temporary files above may be deleted.

If the instructions above have not been followed, SAS will occasionally interrupt execution of the Setup module and ask you if you would like to create the files above. However, SAS by default will create files with the wrong record length, and the Setup module will not execute properly.

### Instructions

To change the default path and filename established by the interface, press **TAB** to move to the field and type over the entry string to change it. Press **ENTER** when done to proceed to the next screen.

### Error Messages

All fields must be filled and the paths and files specified must exist.

Press PF15 to Continue

PLEASE FILL ALL FIELDS

**Interface Function Options**

|               |  |                    |
|---------------|--|--------------------|
| 1.4           | EPS 2.0: Interface Function Options  |                    |
|               | 1) Define Region<br>2) Designate Episode and Carbon-Bond Mechanism (CBM) Species<br>3) Set up Packets for Processing |                    |
|               | Please enter your selection and press Enter: _   |                    |
| PF1/PF13=Help | PF3/PF15=Prev Menu   | PF4/PF16=Main Menu |

This screen allows you to select the interface function you wish to perform. The options are:

*Define region:* Designate UTM and grid resolution for inventory and select counties to be included in the domain.

*Designate episode and CB-IV species:* Enter episode date and hours to be modeled. EPS 2.0 only processes a single day but a subset of hours may be selected. This option also allows you to select chemical species to be modeled.

*Set up packets:* Menus for setting up USERIN and control factor packets for selected emissions inventory processing steps.

**Instructions**

Enter the number of the option you wish to exercise and press ENTER.

**Error Messages**

A valid option number must be entered. The following error message will appear:

|                           |
|---------------------------|
| Press PF15 to Continue    |
| PLEASE SELECT 1, 2, OR 3. |

## Define Region

|   |
|---|
| 1.41  |
| EPS 2.0: Define Region  |
| 1) Define UAM Region<br>2) Select Counties in Domain          |
| Please enter your selection and press Enter: _                |
| PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu |

With this screen you can define the UAM modeling domain or set up the county packet, which designates the data to be processed for this emission inventory. These options are:

*Define region:* Designate UTM coordinates of the modeling domain origin (lower left corner).

Designate grid cell size, number of cells on east/west axis and number of cells on north/south axis.

Designate number of cells above and below mixing height and minimum thickness of each layer.

*Select counties:* Designate all counties wholly or partially contained in the modeling domain.

### Instructions

Enter the number of the option you wish to select and press ENTER.

### Error Messages

A valid option number must be entered. The following error message will appear:

|                        |
|------------------------|
| Press PF15 to Continue |
| PLEASE SELECT 1 OR 2.  |

## Region Definition

1.411

## EPS 2.0: Region Definition

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the USERIN path and file names designated on screen 1.2 (Input Path and Filename Setup) and appears if you select (1) on screen 1.41 (Define Region). If an existing /UAMREGION/ packet or USERIN file containing this packet is specified, the file will be read and field entries displayed on the screen.

If the /UAMREGION/ packet does not exist, the fields will be blank or contain default values. You should verify all default values (if any) for appropriateness to the modeling domain definition.

**Instructions**

If you wish to change this designated path/filename, move the cursor to the field and type over the current entry. Press ENTER to proceed to the next screen.

**Error Messages**

The filename must be designated to continue to the next screen.

Press PF15 to Continue

PLEASE FILL ALL FIELDS

## UAMREGN Packet

```

1.411.1

                                EPS 2.0:  UAMREGN Packet

Modeling Region Origin:

    UTM Easting (meters) _____
    UTM Northing (meters) _____
    UTM Zone _____

Horizontal Grid Definition:

X-axis: origin _____ cell size (m) _____ # of cells _____
Y-axis: origin _____ cell size (m) _____ # of cells _____

Vertical Grid Definition:

    Lower Layer: minimum cell ht (m) _____ # of cells _____
    Upper Layer: minimum cell ht (m) _____ # of cells _____

When finished modifying fields, please press Enter.

PF1/PF13=Help          PF3/PF15=Prev Menu          PF4/PF16=Main Menu

```

The input fields on this screen will be used to create the /UAMREGN/ packet of the USERIN file. You should confirm the modeling domain definition with the UAM modeler.

The /UAMREGN/ packet set up by this screen contains records formatted identically to the REGION packet input to the Urban Airshed Model (UAM). This packet contains a complete definition of the location, size, and resolution of the modeling region. This information is used by EPS 2.0 for spatial allocation of area sources and identification of point sources within the modeling domain, and is output to the header records required for UAM files. For a detailed description of the packet, see the *User's Guide for the Urban Airshed Model, Volumes I and II*.

A brief description of each field follows. For detailed explanation of all fields, refer to part A of the EPS user's manual.

#### *Modeling Region Origin*

UTM Easting, Northing      x-,y-coordinate of the origin of the coordinate system to be used to locate the modeling region and other fixed points. Normally they are zero. The default values for these fields are zero.

UTM zone                      UTM zone of Easting and Northing coordinates.

*Horizontal Grid Definition*

|                  |   |
|------------------|---|
| X-,Y-axis origin | Location of lower-left corner of the grid with respect to the UTM Easting and Northing coordinates. |
| Cell size        | Length of the grid cell along each axis.  |
| Number of cells  | Number of cells in each axis direction (must be greater than 0).                                    |

*Vertical Grid Definition*

|                     |   |
|---------------------|---|
| Minimum cell height | Minimum cell height (in meters) of the cells in the lower layer (below mixing height) and upper layers (above mixing height). |
| Number of cells     | Number of cells in the lower (must be greater than or equal to 1) and upper layer (must be greater than or equal to 0).       |

**Instructions**

On entry to this screen the specified USERIN input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. The only defaults provided on this screen are for the modeling region origin Easting and Northing. After entering data in a field, press **TAB** to move to the next field. When you have filled all fields and you wish to save the changes, press **ENTER** to proceed to the next menu. On exit from this screen the interface will write the /UAMREGN/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. To abort the setup session, press **PF4/PF16**.

**Error Messages**

All fields must be filled for this screen. If you press **ENTER** before all data have been entered, the following error message will appear:

```

Press PF15 to Continue
PLEASE FILL ALL FIELDS WITH VALID VALUES.

```

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## County Subset Selection

|  |
|--|
| 1.412  |
| EPS 2.0: County Subset Selection   |
| 1) Select All Counties in U.S.<br>2) Select Subset of Counties in U.S.<br>3) Edit Preexisting Subset of Counties |
| Please enter your selection and press Enter: _   |
| PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu  |

The selections offered by this screen give you three options for creating or modifying the /COUNTY/ packet of the USERIN file.

### *Select All Counties in the U.S.*

Choosing this option will bring up the list of all counties in the United States and design values. From this list you may select those counties for which you want to process emission inventories. This option is not recommended for selecting a subset of counties for an emission inventory for the UAM. The county design values for regulated pollutants determine the nonattainment status of the county. The U.S. county packet contains fields for ozone, carbon monoxide, and PM-10 design values. The default design values contained in the packet were obtained from *Ozone and Carbon Monoxide Areas Designated Nonattainment* (EPA, 1991). This option can be useful for browsing through and, if necessary, modifying county design values.

### *Select Subset of Counties in U.S.*

The Setup module uses the maximum and minimum coordinates of a county listed in the /UAMREGN/ packet of the specified USERIN input file to determine if any county area falls within the defined modeling domain. You may wish to eliminate those counties whose area within the domain is minimal or does not extended beyond the UAM boundary cells. Refer to the *User's Guide for the Urban Airshed Model, Volumes I and II*, for an explanation of boundary cells.

### *Edit Preexisting Subset of Counties*

If the USERIN input file specified contains a /COUNTY/ packet, the counties included on the existing packet will appear on the screen and may be modified.

### Instructions

Input the number of your selection and press **ENTER** or press **PF3/PF15** to return to the Define Region screen.

### Error Messages

If you enter an invalid selection number, the following error message will appear:

|  |
|--|
| <p>Press PF15 to Continue</p> <p>PLEASE SELECT 1, 2, OR 3.</p> |
|--|

Press the indicated PF keys to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

## U.S. COUNTY Packet

```

1.412.1
                EPS 2.0:  U.S. COUNTY Packet

To delete a row, please type an 'X' on the appropriate line and press
Enter.

Note that after pressing Enter, your entries will be sorted by FIPS
code.

Delete
Row  COUNTY                CODE          O3          CO          PM10
-
-   AUTAUGA                :   01001          -9.0          -9.0          -9.0
-   BALDWIN                 :   01003          -9.0          -9.0          -9.0
-   BARBOUR                 :   01005          -9.0          -9.0          -9.0
-   BIBB                   :   01007          -9.0          -9.0          -9.0
-   BLOUNT                  :   01009          -9.0          -9.0          -9.0
-   BULLOCK                 :   01011          -9.0          -9.0          -9.0
-   BUTLER                  :   01013          -9.0          -9.0          -9.0
-   CALHOUN                 :   01015          -9.0          -9.0          -9.0
-   CHAMBERS                :   01017          -9.0          -9.0          -9.0

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End

```

This screen appears if you selected all counties in the U.S. on screen 1.412 (County Subset Selection). All U.S. counties will be presented by this screen. This screen is useful for browsing the counties to review the design values. This screen may be cumbersome for selecting a subset of counties for an emissions inventory for the UAM.

## Instructions

On entry to this screen, a special COUNTYS.USA file will be read. This file is provided as a default input file and is available with the EPS 2.0 interface. You may delete counties from this file by entering an "X" on the appropriate line. Press ENTER and the selected counties will be deleted from the screen. To scroll up and down the list, press PF7 or PF8. When you have finished deleting the counties or modifying the design values, press PF3 or PF15 to save the changes.

This new data set will be written to the specified output USERIN file.

### **Error Messages**

On entry to this screen, all fields will contain data. If you have to modify fields, make sure all fields are filled. If you press ENTER before all data have been entered, the following error message will appear:

|  |
|--|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES.</p> |
|--|

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. The interface will verify whether the input data type is correct (i.e., numeric or character). To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## County Selection

1.412.2

### EPS 2.0: County Selection

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option 2 on screen 1.412 (County Subset Selection). It displays the USERIN path/file name designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a packet defining the modeling region, the file will be read and the modeling domain definition will be used to select a subset of counties for the user. If the indicated file does not contain a packet defining the modeling region, all counties in the U.S. will be selected.

### Instructions

If you wish to change the designated pathname or need to designate a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen. Pressing PF3/PF15 will return you to the County Subset Selection screen (1.412).

### Error Messages

The filename must be designated to continue to the next screen, if not the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename or press the desired PF key as indicated at the bottom of the screen.

## COUNTY Packet

1.412.21

## EPS 2.0: COUNTY Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

## Delete

| Row | COUNTY | CODE  | O3 | CO | PM10 |
|-----|--------|-------|----|----|------|
| -   | :      | BLNK1 | .  | .  | .    |
| -   | :      | BLNK2 | .  | .  | .    |
| -   | :      | BLNK3 | .  | .  | .    |

PF1/PF13=Help

PF7=Backward

PF8=Forward

PF3/PF15=End

This screen will display all counties identified as being wholly or partially contained in the modeling domain. The Setup module will use the maximum and minimum coordinates of a county to determine if any county area falls within the defined modeling domain. You may wish to eliminate those counties whose area within the domain is minimal or does not extend beyond the UAM boundary cells. Refer to the *User's Guide for the Urban Airshed Model, Volumes I and II*, for an explanation of boundary cells. Blank lines are noted by the FIPS code BLNKx.

## Instructions

On entry to this screen, a special COUNTYS.USA file is accessed by the module to determine which counties should be selected. You may delete counties from this file by entering an "X" on the appropriate line. Press ENTER and the selected counties will be deleted from the screen. To scroll up and down the list, press PF7 or PF8. You must delete all blank lines (FIPS = BLNK). When you have finished deleting the counties or modifying the design values, press PF3 or PF15 to save the changes. This new data set will be written to the specified output USERIN file. To abort the setup session, press PF4/PF16.

**Error Messages**

On entry to this screen all fields will contain data. If you modify or add a FIPS-coded area, make sure all fields are filled. If you press ENTER before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES.

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

**Preexisting County Subset**

1.412.3

**EPS 2.0: Preexisting County Subset**

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option 3 on screen 1.412 (County Subset Selection). It displays the USERIN path/file name designated on screen 1.2: (Input Path and Filename Setup). If an existing /COUNTY/ packet or USERIN file containing this packet is specified, the file will be read and the preselected counties will be displayed on the subsequent screen. If the specified file does not contain the /COUNTY/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If the name is not a valid name, the following message will appear on the screen:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## COUNTY Packet

1.412.31

## EPS 2.0: COUNTY Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS Code 'BLNKx') not being used.

## Delete

| Row | COUNTY | CODE  | O3 | CO | PM10 |
|-----|--------|-------|----|----|------|
| -   | :      | BLNK1 | .  | .  | .    |
| -   | :      | BLNK2 | .  | .  | .    |
| -   | :      | BLNK3 | .  | .  | .    |

PF1/PF13=Help

PF7=Backward

PF8=Forward

PF3/PF15=End

This screen will appear after a filename has been entered on Screen 1.412.3. It will display all counties included in the preexisting subset of counties in the specified /COUNTY/ packet. You may delete counties, add up to three counties, or change the design value for the counties. Blank lines are noted by the FIPS code BLNKx.

## Instructions

On entry to this screen, the indicated input file (which should contain a /COUNTY/ packet) is read for input. You may delete counties from this file by entering an "X" on the appropriate line. Press ENTER and the selected counties will be deleted from the screen. To scroll up and down the list, press PF7 or PF8. You must delete all blank lines (FIPS = BLNKx). When you have finished deleting the counties or modifying the design values, press PF3 or PF15 to save the changes. This new data set will be written to the indicated output USERIN file. To abort the setup session, press PF4/PF16.

## Error Messages

If you modify or add a FIPS coded area, make sure all fields are filled. If you press ENTER before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES.

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

**Designate Modeling Episode and CB-IV Species**

1.42

**EPS 2.0: Designate Modeling Episode and CB-IV Species**

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the USERIN path/filename designated on screen 1.2 (Input Path and Filename Setup). If an existing /EPISODE/ packet or USERIN file containing this packet is specified, the file will be read. The packet contents will be displayed on the next screens (Define EPISODE and Select CB-IV Species). If the indicated file does not contain the /EPISODE/ packet, the subsequent screens will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If the name is not a valid name, the following message will appear on the screen:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## 4.1.2 DEFINE EPISODE/SPECIES

### Select EPISODE (1 of 2)

1.421.1

EPS 2.0: EPISODE Packet (1 of 2)

Select Episode

Inventory Identifier: \_\_\_\_\_

Episode

Begin Date (e.g. 01JAN91): \_\_\_\_\_ End Date: \_\_\_\_\_

Begin Time (Military): \_\_\_\_\_ End Time (Military): \_\_\_\_\_

Number of species: \_\_\_\_\_

When finished modifying fields, please press Enter to continue to the second EPISODE packet screen.

PF1/PF13=Help PF3/PF15=Prev Menu PF4/PF16=Main Menu

The /EPISODE/ packet set up by this screen and the next screen (1.421.2) contains records formatted identically to those in the /CONTROL/ packet input to the Urban Airshed Model (UAM). This packet contains a complete definition of the modeling episode and the Carbon Bond Mechanism species to be modeled. This information is used by EPS 2.0 for temporal and chemical allocation of input emissions. This data is also output to the header records required by the UAM files. For a detailed description of the packet, see *User's Guide for the Urban Airshed Model, Volumes I and II*. A brief description of each field follows.

|                          |   |
|--------------------------|---|
| <i>Inventory ID</i>      | Descriptive text string for emission inventory (60 characters). This can be any string which identifies the file and is used in processing output to the tables only. |
| <i>Begin Date</i>        | Date at the begin time of the first hour to be modeled (begin date must be the same as end date).   |
| <i>End Date</i>          | Date at the end time of the last hour to be modeled (end date must be the same as begin date).  |
| <i>Begin Time</i>        | START of the first hour, i.e., '0600' for 6:00 am   |
| <i>End Time</i>          | END of the last hour, i.e., '2200' for 10:00 pm   |
| <i>Number of Species</i> | Number of CB-IV species to be included on UAM files.  |

#### 4.1.2 DEFINE EPISODE/SPECIES

The core EPS 2.0 modules will only process emission data for a single-day inventory; therefore, the beginning and ending dates should be identical. The Setup module does not verify if you have entered the same dates. However, the core EPS 2.0 modules will flag the error condition and halt processing.

#### Instructions

Before entry to this screen, the specific USERIN input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. When you have filled all fields and you wish to save the changes, press **ENTER** to proceed to the next menu. On exit from this screen the interface will write the /UAMREGN/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. To abort the setup session, press **PF4/PF16**.

#### Error Messages

All fields must be filled for this screen. If you press **ENTER** before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES.

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

#### 4.1.2 DEFINE EPISODE/SPECIES

##### Select CB-IV Species

```
1.421.2

      EPS 2.0:  EPISODE Packet (2 of 2)

      Select CB-IV Species

To delete a row, please type an 'X' on the appropriate line and press
Enter.

Note that after pressing Enter, your entries will be sorted by CB
Species.  Please delete any blank lines (SPECIES='AAA') not being
used.

Delete
Row      SPECIES

--      -----
--      -----
--      -----
--      -----
--      -----
--      -----
--      -----

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End
```

This screen is used to specify the CB-IV species to be included on the emission inventory file. The current species, which are those typically included in an emission inventory, are:

|      |      |
|------|------|
| NO   | NO2  |
| PAR  | OLE  |
| ETH  | TOL  |
| XYL  | ETOH |
| MEOH | FORM |
| ALD2 | ISOP |
| CO   | SO4  |
| AERO |      |

For further information see part A of the EPS user's manual.

On entry to this screen, the specified input file will be read to determine if data for the /EPISODE/ packet exists for the CB-IV species list. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. When you have filled all fields and you wish to save the changes, press ENTER to proceed to the next menu. All fields must be filled on this screen. If there are any remaining blank fields after you have specified the CB species you want to include in the emission inventory file, delete the remaining blank lines (Species = 'AAA') by typing an 'X' in the Delete Row on the lines to be deleted. On exit from this screen the interface will write the /EPISODE/ packet to the designated output file. To exit and save the changes, press PF3/PF15. To abort the setup session, press PF4/PF16. On leaving this screen you will return to the Interface Function Options screen (1.4).

### Error Messages

All fields must be filled for this screen. If you press ENTER before all data have been entered, the following error message will appear:

Press PF15 to Continuen

PLEASE FILL ALL FIELDS WITH VALID VALUES.

Pressing PF15 will return you to the data entry screen. You may then fill in the data required or delete the blank lines.

## Process Emission Data

1.43

## EPS 2.0: Process Emission Data

- 1) Load Data
- 2) Grow to New Year
- 3) Apply Controls
- 4) Chemically Speciate
- 5) Temporally Allocate
- 6) Create UAM Inputs

Please enter your selection and press Enter: \_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select the Setup Packets option in Screen 1.4. It allows you to select the data processing steps you want to perform. The subsequent screens for each option will allow you to setup the necessary USERIN or control factor packets to process your data. The options provided by this screen are as follows.

|                            |  |
|----------------------------|--|
| <i>Load Data</i>           | Converts AIRS workfile or user-generated link-based emission records to internal EPS 2.0 EMBR format.  |
| <i>Grow to New Year</i>    | Project input emissions data to another year, i.e., project to a future year (1990 to 1996) or backcast to a previous year (1990 to 1987).               |
| <i>Apply Controls</i>      | Simulate the effects of the implementation of CAA and/or other controls on the emission data.  |
| <i>Chemically Speciate</i> | Chemically speciate input criteria pollutant emissions to CB-IV species.   |
| <i>Temporally Allocate</i> | Temporally allocate input emissions to episode and hours to be modeled   |
| <i>Create UAM Inputs</i>   | Create final UAM input files, i.e., the EMISSIONS file for input to the UAM and the elevated point source file for input to the UAM preprocessor PTSRCE. |

### **Instructions**

Input the number of your selection and press **ENTER** or press **PF3/PF15** to return to the EPS Interface Function Option Region screen (1.4).

### **Error Messages**

If you enter an invalid selection number, the following error message will appear:

Press PF15 to Continue

PLEASE SELECT 1, 2, 3, 4, 5, OR 6.

Press the indicated PF key to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

**Load Data**

|   |
|---|
| 1.431   |
| EPS 2.0: Load Data  |
| 1) Load Point Source Data<br>2) Load Area/Mobile Data<br>3) Load Link-Based Mobile Data |
| Please enter your selection and press Enter: _  |
| PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu                           |

This screen appears if option 1 (Load Data) is selected on screen 1.43. On this screen you select which data you wish to use in setting up the USERIN packets necessary to process data to the internal EPS 2.0 EMBR format. The options are as follows.

*Load Point Source Data*

Set up the USERIN packet /PREPNT/ for the core module PREPNT, which processes the AIRS AFS workfile formatted data.

*Load Area/Mobile Data*

Set up the USERIN packet /PREAM/ for the core module PREAM, which processes the AIRS AMS workfile formatted data.

*Load Link-Based Mobile*

Set up the USERIN packet /LBASE/ for the core module LBASE, which processes link-based mobile emissions data.

**Instructions**

Input the number of your selection and press ENTER or press PF3/PF15 to return to the Process Emission Data screen (1.43).

## Error Messages

If you enter an invalid selection number the following error message will appear:

|  |
|--|
| <p>Press PF15 to Continue</p> <p>PLEASE SELECT 1, 2, OR 3.</p> |
|--|

Press the indicated PF key to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

## PREPNT Packet

|   |                    |                    |
|---|--------------------|--------------------|
| 1.431.1   |                    |                    |
| EPS 2.0: PREPNT Packet  |                    |                    |
| You have specified the following default path/filename to be used:                |                    |                    |
| <hr/>   |                    |                    |
| If necessary, please complete the filename above or make any other modifications. |                    |                    |
| Please press Enter when done.   |                    |                    |
| PF1/PF13=Help   | PF3/PF15=Prev Menu | PF4/PF16=Main Menu |

This screen appears if the Load Point Source Data option is selected on screen 1.431. It displays the USERIN path/file name designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /PREPNT/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /PREPNT/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to designate a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen. Pressing PF3/PF15 will return you to the Load Emissions Data screen (1.431); pressing PF4/PF16 returns you to the EPS 2.0 main menu.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

|   |
|---|
| Press PF15 to Continue                                    |
| THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER. |

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## PREPNT Packet

```

1.431.11
      EPS 2.0:  PREPNT Packet

Input Coordinates are Geodesic:  YES  (YES=Geodesic, NO=UTM)
Replace missing stack parameters with defaults:  YES  (YES, NO)
Plume Height Cutoff for Elevated Points (meters):  25

Default Stack Parameters
  Height (meters):           3
  Diameter (meters):         0.2
  Gas Exit Temperature (K):  294
  Gas Exit Velocity (m/s):   0.5

Modeling Region Angle of Rotation:  0

When finished modifying fields, please press Enter.

PF1/PF13=Help      PF/PF15=Prev Menu      PF4/PF16=Main Menu

```

This screen is displayed when option (1) is selected on the Load Data screen (1.431). It displays the data to be contained in the /PREPNT/ packet of the USERIN file. PREPNT converts the input AFS workfile format for point sources to the internal EMBR format. This packet contains default values for missing stack parameters, plume height cutoff for initial screening for elevated sources, and other processing options. See the discussion of PREPNT in Section 3 of part A of the EPS user's manual.

#### *Input Coordinates are Geodesic*

Geodesic coordinates are latitude and longitude. If UTM coordinates are provided, this flag should be set to 'NO'. EPS will then expect the UTM zone as well as the Easting and Northing coordinates to be provided.

#### *Replace Missing Stack Parameters with Defaults*

If 'YES' is entered, any input AFS workfile record with missing stack parameters will receive the default stack parameters input by the user in this packet. If 'NO' is entered, any input AFS record with missing stack parameters will be output to the error file.

*Plume Height Cutoff for Elevated Points*

This height is used for the initial screen of low-level and elevated point sources. Modeling personnel should be consulted for an appropriate plume rise height, which is typically set at the minimum height of the lowest vertical layer.

*Default Stack Parameters*

These are typically set to ensure that emissions from stacks with missing stack parameters will remain in the lowest vertical layer of the modeling grid. The typical default values are

|                   |            |
|-------------------|------------|
| Stack height      | 3 meters   |
| Stack diameter    | 0.2 meters |
| Gas temperature   | 294 K      |
| Gas exit velocity | 0.5 m/s    |

*Modeling Region Angle of Rotation*

Angle of rotation of the X-Y axis of the modeling domain. This angle is in degrees counter-clockwise from Northing. The value is typically zero.

**Instructions**

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. When you have filled all fields and you wish to save the changes, press **ENTER** to proceed to the next menu. On exit from this screen the interface will write the /PREPNT/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. On leaving this screen you will return to the Load Data screen (1.431). To abort the setup session, press **PF4/PF16**.

**Error Messages**

All fields must be filled for this screen. If you press **ENTER** before all data has been entered the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If invalid data are entered in any field, the system will beep and place the cursor at the erroneous entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

**PREAM Packet**

1.431.2

EPS 2.0: PREAM Packet

You have specified the following default path/filename to be used:

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=HelpPF3/PF15=Prev MenuPF4/PF16=Main Menu

This screen is displayed if the Load Area/Mobile Data option is selected on screen 1.431. It displays the USERIN path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /PREAM/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /PREAM/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen. Pressing PF3/PF15 will return you to the Load Data screen (1.431); pressing PF4/PF16 will return you to the EPS 2.0 main menu.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## PREAM Packet

|   |       |     |    |    |     |  |
|---|-------|-----|----|----|-----|--|
| 1.431.21  |       |     |    |    |     |  |
| EPS 2.0: PREAM Packet   |       |     |    |    |     |  |
| To delete a row, please type an 'X' on the appropriate line and press Enter.  |       |     |    |    |     |  |
| Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used. |       |     |    |    |     |  |
| Delete Row  | CODE  | SCC | CO | HC | NOX |  |
| -   | BLNK1 | .   | .  | .  | .   |  |
| -   | BLNK2 | .   | .  | .  | .   |  |
| -   | BLNK3 | .   | .  | .  | .   |  |
| PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End  |       |     |    |    |     |  |

This screen displays the data to be contained in the /PREAM/ packet of the USERIN file. It will display data contained in the file entered on screen 1.431.2. The /PREAM/ packet is optional and is used to eliminate on-road link-based motor vehicle emission totals that might be included in the county emission totals. It is suggested that LBASE be run prior to PREAM if it is known that double counting of the emissions is likely to occur. LBASE creates a section in its message file that will provide you with the totals by county and source category code. For more information see the discussion of PREAM and LBASE in Section 3 of part A of the EPS user's manual.

The fields on this screen are as follows.

- |                   |   |
|-------------------|---|
| <i>Delete Row</i> | Place an 'X' in this field on the line you wish to delete.  |
| <i>Code</i>       | FIPS state/county code. The format is <i>ssccc</i> where <i>ss</i> is the state code and <i>ccc</i> is the county or city code. |
| <i>SCC</i>        | This is the AIRS AMS source category code of the emissions to be removed from the total input.                                  |
| <i>CO</i>         | Total link-based carbon monoxide to be removed. Units must be the same as the AMS input emission units.                         |

**HC** Total link-based hydrocarbons to be removed. Units must be the same as the AMS input emission units.

**NOX** Total link-based nitrous oxides to be removed. Units must be the same as the AMS input emission units.

### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exist in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /PREAM/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the Setup session and return to the EPS main menu, press **PF4/PF16**. On leaving this screen you will return to the Load Data screen (1.431).

### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled in, the following error message will appear in the middle of the screen.

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## LBASE Packet

1.431.3

### EPS 2.0: LBASE Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen is displayed if the Load Link-Based Mobile Data option is selected on screen 1.431. It displays the USERIN path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /LBASE/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /LBASE/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen. Pressing PF3/PF15 will return you to the Load Data screen (1.431).

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear on the screen.

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

**LBASE Packet**

```

1.431.31

          EPS 2.0:  LBASE Packet

Input Emissions:  (VOC, THC)
Modeling Region Angle of Rotation:

When finished modifying fields, please press Enter.

PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu

```

This screen displays the data to be contained in the /LBASE/ packet of the USERIN file. LBASE processes the user supplied link-based emissions to the EPS internal EMBR format. This packet contains the following two parameters used in processing the data.

*Input Emissions*

This parameter indicates whether the input hydrocarbon emissions are 'VOC' or 'THC'. If this flag is 'THC', then LBASE will use the reactivity fractions from the SCC(ASC)/speciation profiles cross-reference file to compute VOC.

*Modeling Region Angle of Rotation*

This parameter indicates the angle of rotation of the X-Y axis of the modeling domain. This angle is in degrees counter-clockwise from Northing. The value is typically zero.

For more information see the discussion of LBASE in Section 3.3 of part A of the EPS user's manual.

**Instructions**

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered.

If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. When you have filled all fields and you wish to save the changes, press **ENTER** to proceed to the next menu. On exit from this screen the interface will write the /LBASE/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. On leaving this screen you will return to the Load Data screen (1.431). To abort the setup session, press **PF4/PF16**.

## Errors

All fields must be filled for this screen. If you press **ENTER** before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

Grow to New Year

|   |
|---|
| 1.432   |
| EPS 2.0: Grow to New Year                                     |
| 1) USERIN - CNTLEM Packet<br>2) Select Projection Packet      |
| Please enter your selection and press Enter: _                |
| PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu |

This screen provides two options for setting up the input packets needed to project the input emission inventory to a different year. It appears when option (2) is selected on screen 1.43 (Process Emission Data).

#### *USERIN - CNTLEM Packet*

Choosing this option will allow you to change or create the /CNTLEM/ packet. This packet contains the parameters input to the CNTLEM module. The CNTLEM module projects an input inventory to new year and/or applies control factors.

#### *Control Factors - Select Projection Packet*

Choosing this option will give you the option of whether you wish to project area/mobile or point sources. To create or modify projection factor packets, choose this selection. Subsequent menus will provide you with the options to project area/mobile or point sources. After you have selected the source type you want to project, screens will appear prompting you for an input filename and the parameters contained in the selected /PROJECT PTS/ or /PROJECT AMS/ packets.

#### **Instructions**

Input the number of your selection and press ENTER, or press PF3/PF15 to return to the Define Region screen. Pressing PF4/PF16 will return you to the EPS main menu.

## **Error Messages**

If you enter an invalid selection number, the following error message will appear:

Press PF15 to Continue

PLEASE SELECT 1 or 2.

Press the indicated PF key to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

**CNTLEM Packet**

1.432.1

EPS 2.0: CNTLEM Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears when option 1 is selected on screen 1.432 (Grow to New Year). This screen displays the USERIN path/file name designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /CNTLEM/ packet, the data will be read and displayed on the subsequent screen. If the indicated file does not contain the /CNTLEM/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen. Press PF4/PF16 to return to the EPS 2.0 main menu.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear on the screen.

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## CNTLEM Packet

1.432.11

EPS. 2.0: CNTLEM Packet

Produce output tables by county: \_\_\_\_\_ (YES, NO)

Project Override: \_\_\_\_\_ (LIMIT, IGNORE)

When finished modifying fields, please press Enter.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the data to be contained in the /CNTLEM/ packet of the USERIN file. This packet is the same for the projection of an inventory or for application of control factors. This packet contains the following two flags used in processing the data.

### *Produce output tables by county*

Entering 'YES' will instruct CNTLEM to generate summary tables by county.

### *Project Override*

CNTLEM projects emissions based on the emissions type. With this flag you can determine whether the program will project emissions for allowable emission which are caps (e.g., emission types AE). If this flag is set to 'LIMIT', CNTLEM will not apply projection factors to this record of this emissions type. If this flag is set to 'IGNORE', CNTLEM will ignore the emission type and apply the projection factor.

## Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. When you have

92020R2a.04

all fields and you wish to save the changes, press **ENTER** to proceed to the next menu. On exit from this screen the interface will write the /CNTLEM/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. To abort the setup session, press **PF4/PF16**.

### **Error Messages**

All fields must be filled for this screen. If you press **ENTER** before all data have been entered, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing **PF3/PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

**Select Projection Packet**

1.432.2

EPS 2.0: Select Projection Packet

- 1) Area / Mobile
- 2) Point

Please enter your selection and press Enter: \_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select the Select Projection Packet option on the Grow to New Year screen (1.432). The screen provides the options to create the projection factors packet for either area/mobile sources or point sources.

**Instructions**

Input the number of your selection and press ENTER or press PF3/PF15 to return to the Define Region screen.

**Error Messages**

If you enter an invalid selection number, the following error message will appear:

Press PF15 to Continue

PLEASE SELECT 1 OR 2.

Press the indicated PF key to return to the screen and enter a valid selection. When finished, press the desired PF key as indicated at the bottom of the screen.

## PROJECT AMS Packet

1.432.21

EPS 2.0: PROJECT AMS Packet

You have specified the following default path/filename to be used:

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=HelpPF3/PF15=Prev MenuPF4/PF16=Main Menu

This screen appears if you chose the Area/Mobile option on screen 1.432.2. It displays the CONTROL filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /PROJECT AMS/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /PROJECT AMS/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename. When finished, press the desired PF key as indicated at the bottom of the screen.

## PROJECT AMS Packet

1.432.211

### EPS 2.0: PROJECT AMS Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

| Delete<br>Row | FIPS  | Subregion | ASC | Projection<br>Factor |
|---------------|-------|-----------|-----|----------------------|
| —             | BLNK1 | .         | .   | .                    |
| —             | BLNK2 | .         | .   | .                    |
| —             | BLNK3 | .         | .   | .                    |

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End

This screen allows you to enter the data required to create an /PROJECT AMS/ packets used by CNTLEM to project area and mobil source emissions. The fields on this screen are as follows.

**Delete Row** Place an 'X' in this field on the line you wish to delete.

**FIPS** This is the FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. A blank line is noted by the FIPS code BLNKx.

**Subregion** This is a five-character subregion code. This code may be the AFS-defined subregion, the AMS city codes, or a user-defined code.

**ASC** This is the AMS source category code (ASC) of the emissions to be projected. This is either the four-character EPS internal SIC code or the full 10-character ASC code. The module CNTLEM will check for either code structure.

**Projection Factor** This is the projection factor for all input pollutants contained in the emission inventory being processed. This factor will be greater than 1.0 for growth or less than 1.0 for reductions (i.e., 1.5 or 0.897).

### Instructions

On entry to this screen, the specific input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /PROJECT AMS/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session, press **PF4/PF16** to return to the EPS 2.0 main menu.

### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## PROJECT PTS Packet

|   |                    |                    |
|---|--------------------|--------------------|
| 1.432.22  |                    |                    |
| EPS 2.0: PROJECT PTS Packet   |                    |                    |
| You have specified the following default path/filename to be used:                |                    |                    |
| <hr/>   |                    |                    |
| If necessary, please complete the filename above or make any other modifications. |                    |                    |
| Please press Enter when done.   |                    |                    |
| PF1/PF13=Help   | PF3/PF15=Frev Menu | PF4/PF16=Main Menu |

This screen appears if you chose the Points option on screen 1.432.2. It displays the USERIN path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /PROJECT PTS/ packet, the data will be read and displayed on the subsequent screen. If the indicated file does not contain the /PROJECT PTS/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

|   |
|---|
| Press PF15 to Continue                                    |
| THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER. |

Press the indicated PF key to return to the screen and enter a valid path/filename. When finished, press the desired PF key as indicated at the bottom of the screen.

## PROJECT PTS Packet

```

1.432.221

                EPS 2.0:  PROJECT PTS Packet

To delete a row, please type an 'X' on the appropriate line and press
Enter.

Note that after pressing Enter, your entries will be sorted by FIPS
code.  Please delete any blank lines (FIPS CODE 'BLNKx') not being
used.

Delete
Row          FIPS      Subregion      SIC      Projection Factor

-            BLNK1      .              .              .
-            BLNK2      .              .              .
-            BLNK3      .              .              .

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End

```

This screen allows you to enter the data required to create an /PROJECT PTS/ packet used by CNTLEM to project point source emissions. The fields on this screen are as follows.

*Delete Row* Place an 'X' in this field on the line you wish to delete.

*FIPS* This is FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. Blank lines are noted by the FIPS code BLNKx.

*Subregion* This is a five-character subregion code.

*SIC* This is the two-digit SIC source category code of the emissions to be projected.

*Projection Factor* This is the projection factor for all input pollutants contained on the EMBR.

### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. On exit

from this screen the interface will write the /PROJECT PTS/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

### **Error Messages**

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## Apply Controls

1.433

EPS 2.0: Apply Controls

- 1) USERIN - CNTLEM Packet
- 2) Regulatory Controls
- 3) Discretionary Controls

Please enter your selection and press Enter: \_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen will be displayed if you select option (3) on screen 1.43 (Process Emission Data). It provides three options for setting up the input packets needed to apply control factors in order to estimate the effect of control scenarios on the emission inventory.

*USERIN - CNTLEM Packet*

Choosing this option will allow you to change or create the /CNTLEM/ packet.

*Regulatory Controls*

Choosing this option will give you a choice of regulatory controls to apply. The available control options are shown on screen 1.433.2.

*Discretionary Controls*

Choosing this option will give you a choice of which discretionary controls you wish to apply. The selection of control is shown on screen 1.433.3.

For further discussion of the methodology of the application of control factors by CNTLEM, refer to the discussion of CNTLEM in Section 3.4 of part A of the EPS user's manual.

**Instructions**

Input the number of your select and press ENTER, or press PF3/PF15 to return to the Process Emission Data screen (1.43).

## Error Messages

If you enter an invalid selection number, the following error message will appear:

Press PF15 to Continue

PLEASE SELECT 1, 2, OR 3.

Press the indicated PF key to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

**CNTLEM Packet**

|   |                    |                    |
|---|--------------------|--------------------|
| 1.433.1   |                    |                    |
| EPS 2.0: CNTLEM Packet  |                    |                    |
| You have specified the following default path/filename to be used:                |                    |                    |
| <hr/>   |                    |                    |
| If necessary, please complete the filename above or make any other modifications. |                    |                    |
| Please press Enter when done.   |                    |                    |
| PF1/PF13=Help   | PF3/PF15=Prev Menu | PF4/PF16=Main Menu |

This screen is displayed when option 1 is selected on the Apply Controls screen (1.433). It displays the path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /CNTLEM/ packet, the data will be read and displayed on the subsequent screen. If the indicated file does not contain the /CNTLEM/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a the filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

The valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

|   |
|---|
| Press PF15 to Continue                                    |
| THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER. |

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## CENTLEM Packet

1.433.11

EPS 2.0: CNTLEM Packet

Produce output tables by each control strategy: NO (YES, NO)

Project Override: LIMIT (LIMIT, IGNORE)

When finished modifying fields, please press Enter.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the data to be contained in the /CNTLEM/ packet of the USERIN file. This packet is the same for the projection of an inventory (screen 1.432.11) or for application of control factors. This packet contains the following two flags used in processing the data.

### *Produce output tables for each county*

Entering 'YES' instructs CNTLEM to generate summary tables by county.

### *Project Override*

This flag will not be used by CNTLEM if the control factor packet does not contain either the area/mobile or point source projection packets. For a discussion of this flag, see the documentation for screen 1.432.11.

### **Instructions**

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. You must delete all blank lines (FIPS=BLNKx). On exit from this screen the interface will write the /CNTLEM/ packet to the designated output file. To exit and save the changes, press PF3/PF15. To abort the setup session and return to the EPS 2.0 main menu, press PF4/PF16.

### Error Messages

All fields must be filled for this screen. If you press ENTER before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing PF15 will return you to the data entry screen and you may fill in the data required. If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## Regulatory Controls

1.433.2

### EPS 2.0: Regulatory Controls

- 1) CTG Packet
- 2) RACT Packet
- 3) MACT Packet
- 4) CONTROL EFFICIENCY Packet
- 5) RULE EFFECTIVENESS Packet
- 6) RULE PENETRATION Packet
- 7) ALLOWABLE Packet

Please enter your selection and press Enter: \_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen will appear if you choose the Regulatory Controls option on the Apply Controls screen (1.433). Through this screen you select which of the regulatory control factor packets you wish to create. The term "regulatory control" refers to controls that are required because of federal, state, or local regulations. See Section 3.4 of part A of the EPS user's manual for a discussion of the current application of these control factors. Future interpretation or modification of the Clean Air Act may alter the current method of applying this factor. Seven control factor options are offered on this screen:

CTG (Control Technique Guideline)  
RACT (Reasonably Available Control Technology)  
MACT (Maximum Achievable Control Technology)  
Control Efficiency  
Rule Effectiveness  
Rule Penetration  
Allowable

### Instructions

Input the number of your selection and press ENTER to process your request, or press PF3/PF15 to return to the Apply Controls screen (1.433). Pressing PF4/PF16 will return you to the EPS 2.0 main menu.

### Error Messages

If you enter an invalid selection number, the following error message will appear:

Press PF15 to Continue  
PLEASE SELECT 1, 2, 3, 4, 5, 6, OR 7.

Press the indicated PF key to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

## CTG Packet

1.433.21

### EPS 2.0: CTG Packet

You have specified the following default path/filename to be used:

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option (1) on the Regulatory Controls screen (1.433.2). It displays the control factors input path/filename designated on Screen 1.2 (Input Path and Filename Setup). If the specified file contains a /CTG/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /CTG/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be entered to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

### 4.1.3.3 APPLY CONTROLS

#### CTG Packet

1.433.211

EPS 2.0: CTG Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

| Delete<br>Row | FIPS  | Subregion | SCC | Control Factors |     | Cutoff Limit |     |
|---------------|-------|-----------|-----|-----------------|-----|--------------|-----|
|               |       |           |     | NOX             | VOC | NOX          | VOC |
| -             | BLNK1 | .         | .   | .               | .   | .            | .   |
| -             | BLNK2 | .         | .   | .               | .   | .            | .   |
| -             | BLNK3 | .         | .   | .               | .   | .            | .   |

PF1/PF13=Help
PF7=Backward
PF8=Forward
PF3/PF15=End

This screen allows you to enter the data required to create a /CTG/ packet used by CNTLEM to apply the CTG (Control Technique Guideline) factors. The fields on this screen are as follows.

- Delete Row* Place an 'X' in this field on the line you wish to delete.
- FIPS* This is a FIPS region code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county or city code. Blank lines are noted by the FIPS code BLNKx.
- Subregion* This is a five-character subregion code.
- SCC* This is the eight-digit Source Classification Code for point sources or 10-digit ASC code for area/mobile sources of the emissions to be controlled.
- Control Factors* These are the CTG control factors to be applied to the pollutant:  
(1) oxides of nitrogen, and (2) volatile organic hydrocarbons.
- Cutoff Limits* Many of the CTG controls are applied based on throughput or activity levels. You must input the emission limit above which the control factors are to be applied. The cutoff limit must be specified in the same units as the emissions contained on the input emission inventory EMBR record.

## Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. On exit from this screen the interface will write the /CTG/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

## Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated field. You may then proceed with the session.

**RACT Packet**

1.433.22

**EPS 2.0: RACT Packet**

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option (2) on the Regulatory Control screen (1.433.2). This screen displays the path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /RACT/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /RACT/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter the filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear on the screen:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## RACT Packet

1.433.221

### EPS 2.0: RACT Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

| Delete<br>Row | FIPS  | Subregion    | SCC         | Control Factors<br>VOC | NOx |
|---------------|-------|--------------|-------------|------------------------|-----|
| —             | BLNK1 | .            | .           | .                      | .   |
| —             | BLNK2 | .            | .           | .                      | .   |
| —             | BLNK3 | .            | .           | .                      | .   |
| PF1/PF13=Help |       | PF7=Backward | PF8=Forward | PF3/PF15=End           |     |

This screen allows you to enter the data required to create a /RACT/ packet used by CNTLEM to apply the Reasonably Available Control Technology factors. The fields on this screen are as follows:

|                        |   |
|------------------------|---|
| <i>Delete Row</i>      | Place an 'X' in this field on the line you wish to delete.  |
| <i>FIPS</i>            | This is the FIPS state/county code. The format is <i>ssccc</i> , where <i>ss</i> is the state code and <i>ccc</i> is the county or city code. Blank lines are noted with the FIPS code BLNKx. |
| <i>Subregion</i>       | This is a five-character subregion code.  |
| <i>SCC</i>             | This is the eight-digit Source Classification Code for point sources or the 10-digit ASC code for area/mobile sources of the emissions to be controlled.                                      |
| <i>Control Factors</i> | These are the RACT controls factors to be applied to the pollutant: (1) oxides of nitrogen, and (2) volatile organic hydrocarbons.  |

### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /RACT/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before filling in all of the data fields, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated field. You may then proceed with the session.

## MACT Packet

1.433.23

### EPS 2.0: MACT Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option (3) on the Regulatory Control screen (1.433.2). It displays the control factors path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /MACT/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /MACT/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF keys indicated at the bottom of the screen.

### 4.1.3.3 APPLY CONTROLS

#### MACT Packet

1.433.231

EPS 2.0: MACT Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

| Delete<br>Row | FIPS  | Subregion | SCC | Control Factor<br>VOC |
|---------------|-------|-----------|-----|-----------------------|
| -             | BLNK1 | .         | .   | .                     |
| -             | BLNK2 | .         | .   | .                     |
| -             | BLNK3 | .         | .   | .                     |

PF1/PF13=Help
PF7=Backward
PF8=Forward
PF3/PF15=End

This screen allows you to enter the data required to create a /MACT/ packet used by CNTLEM to apply the Maximum Achievable Control Technology factors. The fields on this screen are as follows.

- Delete Row* Place an 'X' in this field on the line you wish to delete.
- FIPS* This is the FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. Blank lines are noted by the FIPS code BLNKx.
- Subregion* This is a five-character subregion code.
- SCC* This is the eight-digit Source Classification Code for point sources or the 10-digit ASC code for area/mobile sources of the emissions to be controlled.
- Control Factor* These are the MACT controls factors applied to hydrocarbon emissions that contain one or more of the identified toxic compounds in quantities that exceed the Clean Air Act limits.

## Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /MACT/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the main menu, press **PF4/PF16**.

## Error Messages

All data fields on this screen must be filled. If you press **ENTER** before filling all of the data fields, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS

Pressing **PF3/PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

**CONTROL EFFICIENCY Packet**

1.433.24

**EPS 2.0: CONTROL EFFICIENCY Packet**

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option (4) on the Regulatory Control screen (1.433.2). It displays the control factors input path/filename, designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /CONTROL EFFICIENCY/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /CONTROL EFFICIENCY/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## CONTROL EFFICIENCY Packet

1.433.241

### EPS 2.0: CONTROL EFFICIENCY Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

|                             |             |              |           |               |
|-----------------------------|-------------|--------------|-----------|---------------|
| Delete Row: _               | FIPS: BLNK1 | Subregion: . | PLNTID: . | Equip Code: . |
|                             | SIC: .      | SCC: .       | STACK: .  |               |
| Percent Control Efficiency: | NOX: .      | VOC: .       | CO: .     |               |
|                             | SOX: .      | TSP: .       | PM: .     |               |

|               |              |             |              |
|---------------|--------------|-------------|--------------|
| PF1/PF13=Help | PF7=Backward | PF8=Forward | PF3/PF15=End |
|---------------|--------------|-------------|--------------|

This screen allows you to enter the data required to create a /CONTROL EFFICIENCY/ packet used by CNTLEM to apply the control efficiency (CE) factors. The number of inputs needed for each record of this packet requires multiple lines of screen input. The fields on this screen are as follows.

*Delete Row*      Place an 'X' in this field on the line you wish to delete.

*FIPS*              This is the FIPS region code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county or city code. A blank line is noted by the FIPS code which is BLNKx.

*Subregion*        This is a five-character subregion code.

*PLNTID*            This is the AIRS AFS facility identification (5 character)

*SIC*                This is the Standard Industrial Category code for point sources or leading four-digit ASC code for area/mobile sources.

*SCC*                This is the eight-character Source Classification Code for point sources or the 10-character ASC code for area/mobile sources of the emissions to be controlled.

*STACK*            This is the three-digit AIRS AFS stack number.

#### 4.1.3.3 APPLY CONTROLS

|                                   |  |
|-----------------------------------|--|
| <i>Equipment Code</i>             | This is the primary control equipment code (two digits, 0 = applies to all equipment).   |
| <i>Percent Control Efficiency</i> | These are the percent control efficiency factors for each pollutant. The values are entered as the percent efficiency of the proposed control (i.e., 80.0 for 80 percent). |

#### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /CONTROL EFFICIENCY/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

#### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## RULE EFFECTIVENESS Packet

1.433.25

### EPS 2.0: RULE EFFECTIVENESS Packet

You have specified the following default path/filename to be used:

\_\_\_\_\_

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option (5) on the Regulatory Control screen (1.433.2). It displays the control factors input path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /RULE EFFECTIVENESS/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /RULE EFFECTIVENESS/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid pathname/file must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## RULE EFFECTIVENESS Packet

1.433.251

## EPS 2.0: RULE EFFECTIVENESS Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

Delete Row: \_ FIPS: BLNK1 Subregion: . PLNTID: . Equip  
SIC: . SCC: . STACK: . Code: .

Percent Rule NOX: . VOC: . CO: .  
Effectiveness: SOX: . TSP: . PM: .

PF1/PF13=Help

PF7=Backward

PF8=Forward

PF3/PF15=End

This screen allows you to enter the data required to create a /RULE EFFECTIVENESS/ packet used by CNTLEM to apply the rule effectiveness factors. The amount of inputs need for each record of this packet requires multiple lines of screen input. The fields on this screen are as follows:

|                   |  |
|-------------------|--|
| <i>Delete Row</i> | Place an 'X' in this field on the line you wish to delete.   |
| <i>FIPS</i>       | This is the FIPS state/county code. The format is <i>ssccc</i> , where <i>ss</i> is the state code and <i>ccc</i> is the county. A blank line is noted by the FIPS code <i>BNLKx</i> . |
| <i>Subregion</i>  | This is a five-character subregion code.   |
| <i>PLNTID</i>     | This is the five-character AIRS AFS facility identification.   |
| <i>SIC</i>        | Standard Industrial Category code for point sources or leading four-digit ASC code for area/mobile sources.  |
| <i>SCC</i>        | This 10-character is the eight-character Source Classification Code for point sources or the 10-character ASC code for area/mobile sources of the emissions to be controlled.          |
| <i>STACK</i>      | This is the three-digit AIRS AFS stack number.   |

|                                   |   |
|-----------------------------------|---|
| <i>Equipment Code</i>             | This is the primary control equipment code (two digits, 0 = applies to all equipment)   |
| <i>Percent Rule Effectiveness</i> | These are the percent rule effectiveness factors for each pollutant. The values are entered as percent effectiveness of the proposed controls (i.e., 80.0 for 80 percent) |

### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /RULE EFFECTIVENESS/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the main menu, press **PF4/PF16**.

### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## RULE PENETRATION Packet

1.433.26

EPS 2.0: RULE PENETRATION Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if you select option (6) on the Regulatory Control screen. It displays the control factor path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /RULE PENETRATION/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /RULE PENETRATION/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## RULE PENETRATION Packet

1.433.261

### EPS 2.0: RULE PENETRATION Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

|               |              |              |              |         |
|---------------|--------------|--------------|--------------|---------|
| Delete Row: _ | FIPS: BLNK1  | Subregion: . | PLNTID: .    | Equip   |
|               | SIC: .       | SCC: .       | STACK: .     | Code: . |
| Percent       | NOX: .       | VOC: .       | CO: .        |         |
| Penetration:  | SOX: .       | TSP: .       | PM: .        |         |
| PF1/PF13=Help | PF7=Backward | PF8=Forward  | PF3/PF15=End |         |

This screen allows you to enter the data required to create a /RULE PENETRATION/ packet used by CNTLEM to apply the rule penetration factors. The amount of inputs need for each record of this packet requires multiple lines of screen input. The fields on this screen are as follows:

|                   |  |
|-------------------|--|
| <i>Delete Row</i> | Place an 'X' in this field on the line you wish to delete.   |
| <i>FIPS</i>       | This is the FIPS state/county code. The format is <i>ssccc</i> , where <i>ss</i> is the state code and <i>ccc</i> is the county. A blank line is noted by the FIPS code BLNKx. |
| <i>Subregion</i>  | This is a five-character subregion code.   |
| <i>PLNTID</i>     | This is the AIRS AFS facility identification.  |
| <i>SIC</i>        | This is the Standard Industrial Category code for point sources or leading four-digit ASC code for area/mobile sources.  |
| <i>SCC</i>        | This is the eight-digit Source Classification Code for point sources or the 10-digit ASC code for area/mobile sources of the emissions to be controlled.                       |
| <i>STACK</i>      | This is the three-digit AIRS AFS Stack number.   |

#### 4.1.3.3 APPLY CONTROLS

|                            |  |
|----------------------------|--|
| <i>Equipment Code</i>      | This is the primary control equipment code (two digits, 0 = applies to all (equipment)).   |
| <i>Percent Penetration</i> | These are percent rule penetration factors for each pollutant. The values are entered as percent penetration of the proposed controls (i.e., 80.0 for 80 percent). |

#### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /RULE PENETRATION/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session press, **PF4/PF16**.

#### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## ALLOWABLE Packet

1.433.27

EPS 2.0: ALLOWABLE Packet

You have specified the following default path/filename to be used:

\_\_\_\_\_  
If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (7) is selected on the Regulatory Control screen (1.433.2). It displays the Control Factor path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains an /ALLOWABLE/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /ALLOWABLE/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear on the screen.

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key indicated at the bottom of the screen.

### 4.1.3.3 APPLY CONTROLS

#### ALLOWABLE Packet

1.433.271

#### EPS 2.0: ALLOWABLE Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

|               |             |              |           |          |
|---------------|-------------|--------------|-----------|----------|
| Delete Row: _ | FIPS: BLNK1 | Subregion: . | PLNTID: . | Type: .  |
|               | SIC: .      | SCC: .       | STACK: .  | Point: . |

|            |        |        |       |
|------------|--------|--------|-------|
| Allowable  | NOX: . | VOC: . | CO: . |
| Emissions: | SOX: . | TSP: . | PM: . |

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End

This screen allows you to enter the data required to create an /ALLOWABLE/ packet used by CNTLEM to apply allowable emission limits. The amount of inputs need for each record of this packet requires multiple lines of screen input. The fields on this screen are as follows:

|                   |  |
|-------------------|--|
| <i>Delete Row</i> | Place an 'X' in this field on the line you wish to delete.   |
| <i>FIPS</i>       | This is the FIPS state/county code. The format is <i>ssccc</i> , where <i>ss</i> is the state code and <i>ccc</i> is the county. A blank line is noted by the FIPS code BLNK1x.        |
| <i>Subregion</i>  | This is a five-character subregion code.   |
| <i>PLNTID</i>     | This is the five-character AIRS AFS facility identification.   |
| <i>Type</i>       | This indicates whether the allowable control type is a cap (CP) or a replacement (RP) value. See Section 3.4 of part A of the EPS user's manual for more discussion on this parameter. |
| <i>SIC</i>        | This is the Standard Industrial Category code for point sources or leading four-digit ASC code for area/mobile sources.  |

|                            |  |
|----------------------------|--|
| <i>SCC</i>                 | This is the eight-digit Source Classification Code for point sources or the 10-digit ASC code for area/mobile sources of the emissions to be controlled. |
| <i>STACK</i>               | This is the three-digit AIRS AFS stack number.   |
| <i>Point</i>               | This is the AFS point identification code (two digits, 0 = applies to all points feeding a stack).   |
| <i>Allowable Emissions</i> | These are the allowable emission limit for each pollutant. The emission limits entered on this packet must be in the same units as the emissions data.   |

### Instructions

On entry to this screen the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /ALLOWABLE/ packet to the designated output file. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## Discretionary Controls

1.433.3

## EPS 2.0: Discretionary Controls

- 1) ACTIVITY CODE Packet
- 2) CONTROL STRATEGY Packet
- 3) POD Packet
- 4) PROFILE CODE Packet
- 5) FIPS CODE Packet
- 6) SOURCE CATEGORY Packet
- 7) SUBGRID Packet

Please enter your selection and press Enter: \_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (3) is selected on the Apply Controls screen (1.433). Through this screen, you select which of the discretionary control factor packets you wish to create. The discretionary controls are those controls local agencies may define for their locale. These controls can reflect a wide variety of control scenarios. There are seven options for applying control factors:

Activity code  
 Control strategy (method) code  
 Pod code  
 Speciation profile code  
 Process code  
 FIPS (or subregion) code  
 Source Category (SIC and SCC(ASC))  
 Subgrid

For the definitions of activity, control method, pod, process and speciation profile codes, refer to Appendix E ("Code Descriptions") in part A of the EPS user's manual.

**Instructions**

Input the number of your selection and press ENTER to process your request, or press PF3/PF15 to return to the Apply Controls screen (1.433).

## Error Messages

If you enter an invalid selection number, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE SELECT 1, 2, 3, 4, 5, 6, OR 7</p> |
|---|

Press the indicated PF key to return to the screen and enter a valid number, or press the desired PF key as indicated at the bottom of the screen.

## ACTIVITY CODE Packet

1.433.31

EPS 2.0: ACTIVITY CODE Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (1) is selected on the Discretionary Controls screen (1.433.3). It displays the control factors input path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains an /ACTIVITY CODE/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /ACTIVITY CODE/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear on the screen.

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## ACTIVITY CODE Packet

1.433.311

## EPS 2.0: ACTIVITY CODE Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

| Delete | FIPS  | Subregion | Activity Code | Control Factors |     |    |     |     |    |
|--------|-------|-----------|---------------|-----------------|-----|----|-----|-----|----|
| Row    |       |           |               | NOx             | VOC | CO | SOx | TSP | PM |
| -      | BLNK1 | .         | .             | .               | .   | .  | .   | .   | .  |
| -      | BLNK2 | .         | .             | .               | .   | .  | .   | .   | .  |
| -      | BLNK3 | .         | .             | .               | .   | .  | .   | .   | .  |

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End

This screen allows you to enter the data required to create the /ACTIVITY CODE/ packet used by CNTLEM to apply activity code control factors. The fields on this screen are as follows:

*Delete Row*      Place an 'X' in this field on the line you wish to delete.

*FIPS*      This is the FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. A blank line is noted by FIPS code BNLKx.

*Subregion*      This is a five-character subregion code.

*Activity Code*      This is the code for source category representing similar activities. Definitions of these codes are contained in Appendix E of part A of the EPS user's manual.

*Control Factors*      These are the activity code control factors for each pollutant.

**Instructions**

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. To remove a line from the file, enter an 'X' next to the line you wish deleted in the Delete Row field. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /ACTIVITY CODE/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

**Error Messages**

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## CONTROL CODE Packet

1.433.32

EPS 2.0: CONTROL CODE Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (2) is selected on the Discretionary Control screen (1.433.3). It displays the control factors path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /CONTROL CODE/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /CONTROL CODE/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

### 4.1.3.3 APPLY CONTROLS

#### CONTROL CODE Packet

1.433.321

#### EPS 2.0: CONTROL CODE Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

|        |       |           |              | ----- Control Factors ----- |     |    |     |     |    |
|--------|-------|-----------|--------------|-----------------------------|-----|----|-----|-----|----|
| Delete | FIPS  | Subregion | Control Code | NOx                         | VOC | CO | SOx | TSP | PM |
| -      | BLNK1 | .         | .            | .                           | .   | .  | .   | .   | .  |
| -      | BLNK2 | .         | .            | .                           | .   | .  | .   | .   | .  |
| -      | BLNK3 | .         | .            | .                           | .   | .  | .   | .   | .  |

PF1/PF13=Help

PF7=Backward

PF8=Forward

PF3/PF15=End

This screen allows you to enter the data required to create the /CONTROL CODE/ packet used by CNTLEM to apply control method control factors. The fields on this screen are as follows.

*Delete Row* Place an 'X' in this field on the line you wish to delete.

*FIPS* This is the FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. A blank line is noted by the FIPS code BLNKx.

*Subregion* This is a five-character subregion code.

*Control Code* This is the code for source category representing similar control methods. Definition of these codes are contained in Appendix E of part A of the EPS user's manual.

*Control Factors* These are the control method control factors for each pollutant.

## Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' next to the line you wish deleted in the Delete Row field. You must delete all blank lines (FIPS - BLNKx). On exit from this screen the interface will write the /CONTROL CODE/ packet to the designated output file. To exit and save the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

## Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## POD CODE Packet

1.433.33

EPS 2.0: POD CODE Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (3) is selected on the Discretionary Controls screen (1.433.3). It displays the control factors input path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /POD CODE/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /POD CODE/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

### 4.1.3.3 APPLY CONTROLS

#### POD CODE Packet

```

1.433.331

                        EPS 2.0:  POD CODE Packet

To delete a row, please type an 'X' on the appropriate line and press
Enter.

Note that after pressing Enter, your entries will be sorted by FIPS
code. Please delete any blank lines (FIPS CODE 'BLNKx') not being
used.

Delete
Row  FIPS  Subregion  POD  ----- Control Factors -----
      FIPS  Subregion  Code  NOx   VOC   CO   SOx   TSP   PM
-    BLNK1      .      .      .      .      .      .      .
-    BLNK2      .      .      .      .      .      .      .
-    BLNK3      .      .      .      .      .      .      .

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End
  
```

This screen allows you to enter the data required to create the /POD CODE/ packet used by CNTLEM to apply POD code control factors. The fields on this screen are as follows.

*Delete Row* Place an 'X' in this field on the line you wish to delete.

*FIPS* This is FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. A blank line is noted by the FIPS code BLNKx.

*Subregion* This is a five-character subregion code.

*POD Code* This is the code for source category grouped according to the designations in EPS 2.0 glossary file.

*Control Factors* These are the POD control factors for each pollutant.

#### Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. Each screen will display one record from the packet. To move to another line, press PF7 for the previous line

#### 4.1.3.3 APPLY CONTROLS

or PF8 to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank line (FIPS = BLNKx). On exit from this screen the interface will write the /POD CODE/ packet to the designated output file. To exit and save the changes, press PF3/PF15. To abort the setup session and return to the EPS 2.0 main menu, press PF4/PF16.

#### Error Messages

All data fields on this screen must be filled. If you press ENTER before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## PROFILE CODE Packet

1.433.34

EPS 2.0: PROFILE CODE Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (4) is selected on the Discretionary Controls screen (1.433.3). It displays the control factors path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /PROFILE CODE/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /PROFILE CODE/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

### 4.1.3.3 APPLY CONTROLS

#### PROFILE CODE Packet

```

1.433.341

      EPS 2.0:  PROFILE CODE Packet

To delete a row, please type an 'X' on the appropriate line and press
Enter.

Note that after pressing Enter, your entries will be sorted by FIPS
code. Please delete any blank lines (FIPS CODE 'BLNKx') not being
used.

Delete      Profile      ----- Control Factors -----
Row  FIPS Subregion  Code      NOx      VOC      CO      SOx      TSP      PM
-    BLNK1      .      .      .      .      .      .      .
-    BLNK2      .      .      .      .      .      .      .
-    BLNK3      .      .      .      .      .      .      .

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End
  
```

This screen allows you to enter the data required to create the /PROFILE CODE/ packet used by CNTLEM to apply speciation profile code control factors. The fields on this screen are as follows.

- Delete Row*      Place an 'X' in this field on the line you wish to delete.
- FIPS*              This is the FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. A blank line is noted by the FIPS code BLNKx.
- Subregion*        This is a five-character subregion code.
- Profile Code*      This is the code for speciation profile for which controls are to be applied.
- Control Factors*    These are the speciation profile code control factors for each pollutant.

#### Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. Each screen will

display one record from the packet. To move to another line, press PF7 for the previous line or PF8 to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /PROFILE CODE/ packet to the designated output file. To exit and save the changes, press PF3/PF15. To abort the setup session and return to the EPS 2.0 main menu, press PF4/PF16.

### **Error Messages**

All data fields on this screen must be filled. If you press ENTER before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## FIPS CODE Packet

1.433.35

EPS 2.0: FIPS CODE Packet

You have specified the following default path/filename to be used:

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=HelpPF3/PF15=Prev MenuPF4/PF16=Main Menu

This screen appears if option (5) is selected on the Discretionary Controls screen (1.433.3). It displays the control factors path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /FIPS CODE/ packet, the data will be read and displayed on the subsequent screen. If the indicated file does not contain the /FIPS CODE/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## FIPS CODE Packet

1.433.351

## EPS 2.0: FIPS CODE Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

| Delete<br>Row | FIPS  | Subregion | Control Factors |     |    |     |     |    |
|---------------|-------|-----------|-----------------|-----|----|-----|-----|----|
|               |       |           | NOx             | VOC | CO | SOx | TSP | PM |
| -             | BLNK1 | .         | .               | .   | .  | .   | .   | .  |
| -             | BLNK2 | .         | .               | .   | .  | .   | .   | .  |
| -             | BLNK3 | .         | .               | .   | .  | .   | .   | .  |

PF1/PF13=Help      PF7=Backward      PF8=Forward      PF3/PF15=End

This screen allows you to enter the data required to create the /FIPS CODE/ packet used by CNTLEM to apply by county or subregion control factors. The fields on this screen are as follows:

*Delete Row*      Place an 'X' in this field on the line you wish to delete.

*FIPS*      This is the FIPS state/county code. The format is *ssccc*, where *ss* is the state code and *ccc* is the county. A blank line is noted by the FIPS code BLNKx.

*Subregion*      This is a five-character subregion code.

*POD Code*      This is the code for source categories grouped according to the designations in the EPS 2.0 glossary file.

*Control Factors*      These are the pod control factors for each pollutant.

### Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. Each screen will

#### 4.1.3.3 APPLY CONTROLS

display one record from the packet. To move to another line, press PF7 for the previous line or PF8 to move forward to the next line. To remove a line from the file enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /POD CODE/ packet to the designated output file. To exit and save the changes, press PF3/PF15. To abort the setup session and return to the EPS 2.0 main menu, press PF4/PF16.

#### Error Messages

All data fields on this screen must be filled. If you press ENTER before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## SOURCE CATEGORY Packet

1.433.36

EPS 2.0: SOURCE CATEGORY Packet

You have specified the following default path/filename to be used:

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (6) is selected on the Discretionary Controls screen (1.433.3). It displays the control factors path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /SOURCE CATEGORY/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /SOURCE CATEGORY/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## SOURCE CATEGORY Packet

1.433.361

## EPS 2.0: SOURCE CATEGORY Packet

To delete a row, please type an 'X' on the appropriate line and press Enter.

Note that after pressing Enter, your entries will be sorted by FIPS code. Please delete any blank lines (FIPS CODE 'BLNKx') not being used.

Delete Row: \_ FIPS: BLNK1 Subregion: .  
SIC: . SCC: .

Control NOx: . VOC: . CO: .  
Factors: SOx: . TSP: . PM: .

PF1/PF13=Help PF7=Backward PF8=Forward PF3/PF15=End

This screen allows you to enter the data required to create the /SOURCE CATEGORY/ packet used by CNTLEM to apply control factors to specified source categories. The fields on this screen are as follows.

*Delete Row* Place an 'X' in this field on the line you wish to delete.

*FIPS* This is the FIPS state/county code. The format is *ssccc* where *ss* is the state code and *ccc* is the county. A blank line is noted by the FIPS code BLNKx.

*Subregion* This is a five-character subregion code.

*SIC* This is the standard Industrial Category code for point sources or leading four-digit ASC code for area/mobile sources.

*SCC* This is the eight-digit Source Classification Code for point sources or the 10-digit ASC code for area/mobile sources of the emissions to be controlled.

*Control Factors* These are the source category control factors for each pollutant.

## Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS = BLNKx). On exit from this screen the interface will write the /SOURCE CATEGORY/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

## Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing **PF3/PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## SUBGRID Packet

1.433.37

## EPS 2.0: SUBGRID Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (7) is selected on the Discretionary Controls screen (1.433.3). It displays the control factors path/filename (up to 64 characters) designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /SUBGRID/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /SUBGRID/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the appropriate position in the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## SUBGRID Packet

```

1.433.371

      EPS 2.0:  SUBGRID Packet

To delete a row, please type an 'X' on the appropriate line and press
Enter.

Note that after pressing Enter, your entries will be sorted by FIPS
code. Please delete any blank lines (Xorigin 'BLNKx') not being used.


Delete Row:  _      Xorigin:      .      Yorigin:      .
              Xend:      .      Yend:      .


Control      NOx:      .      VOC:      .      CO:      .
Factors:     SOx:      .      TSP:      .      PM:      .


PF1/PF13=Help      PF7=Backward      PF8=Forward      PF15=End

```

This screen allows you to enter the data required to create the /SUBGRID/ packet used by CNTLEM to apply control factors to specified geographical subregion of the modeling domain. The fields on this screen are as follows.

*Delete Row* Place an 'X' in this field on the line you wish to delete.

*Xorigin* This is the X-cell coordinate (in grid cell units, five digits) of the grid cell in the lower left corner of rectangular subgrid region.

*Yorigin* This is the Y-cell coordinate (in grid cell units, five digits) of the grid cell in the lower left corner of rectangular subgrid region.

*Xend* This is the X-cell coordinate (in grid cell units, five digits) of the grid cell in the upper right corner of rectangular subgrid region.

*Yend* This is the Y-cell coordinate (in grid cell units, five digits) of the grid cell in the upper right corner of rectangular subgrid region.

*Control Factors* These are the subgrid control factors for each pollutant.

### Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press **TAB** to move to the next field. Each screen will display one record from the packet. To move to another line, press **PF7** for the previous line or **PF8** to move forward to the next line. To remove a line from the file, enter an 'X' in the Delete Row field next to the line you wish deleted. You must delete all blank lines (FIPS - BLNKx). On exit from this screen the interface will write the /SUBGRID/ packet to the designated output file. To exit without saving the changes, press **PF3/PF15**. To abort the setup session and return to the EPS 2.0 main menu, press **PF4/PF16**.

### Error Messages

All data fields on this screen must be filled. If you press **ENTER** before all of the data fields have been filled, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing **PF3/PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated field. You may then proceed with the session.

## CHMSPL Packet

1.434

EPS 2.0: CHMSPL Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (4) is selected on the Process Emissions Data screen (1.43). It displays the USERIN path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /CHMSPL/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /CHMSPL/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid pathname is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## CHMSPL Packet

1.434.1

EPS 2.0: CHMSPL Packet

Continue processing with incompatible species lists: \_\_\_\_ (YES, NO)

Print tables by Speciation Profile Code: \_\_\_\_ (YES, NO)

Force profile match: \_\_\_\_ (YES, NO)

When finished modifying fields, please press Enter.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the data to be contained in the /CHMSPL/ packet of the USERIN file. This packet is the same for the projection of an inventory or for application of control factors. This packet contains the following three flags used in processing the data.

*Continue processing with incompatible species list:* This option flags whether execution should continue if the species list of the /EPISODE/ packet does not match the list of species contained on the speciation profiles list. Enter a 'YES' to continue with execution even though the species lists are incompatible. Enter a 'NO' to terminate execution if the species list do not match.

*Print tables by Speciation Profile Code:* The default output tables from CHMSPL consists of input criteria pollutants and output CB species. In addition, tables can be generated showing the input and output totals by speciation profile code. If you enter 'YES', the optional tables will be generated; if you enter 'NO', the optional tables will not be generated.

*Force profile match:* This parameter indicates how CHMSPL will treat records without a matching profile code. A 'YES' indicates that only records for which CHMSPL can determine a profile code will be processed. If a 'NO' is entered, all records for which a profile was not found will be speciated according to the default profile.

For more information on these inputs, see the discussion of CHMSPL in Section 3.5 of part A of the EPS user's manual.

## Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. When you have filled all fields and you wish to save the changes, press ENTER to proceed to the next menu. On exit from this screen the interface will write the /CHMSPL/ packet to the designated output file. To exit without saving the changes press PF3/PF15. To abort the setup session and return to the EPS 2.0 main menu press PF4/PF16.

## Error Messages

All fields must be filled for this screen. If you press ENTER before all data have been entered, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## TMPRL Packet

1.435

## EPS 2.0: TMPRL Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (5) is selected on the Process Emissions Data screen (1.43). It displays the USERIN path/file name designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /TMPRL/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /TMPRL/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear:

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

#### 4.1.3.5 TEMPORALLY ALLOCATE

##### TMPRL Packet

|  |                    |                    |
|--|--------------------|--------------------|
| 1.435.1  |                    |                    |
| EPS 2.0: TMPRL Packet                                      |                    |                    |
| Emiss/met data time match: _____ (YES, NO)                 |                    |                    |
| Day of the Week: _____ (MON, TUE, WED, THU, FRI, SAT, SUN) |                    |                    |
| When finished modifying fields, please press Enter.        |                    |                    |
| PF1/PF13=Help  | PF3/PF15=Prev Menu | PF4/PF16=Main Menu |

This screen displays the data to be contained in the /TMPRL/ packet of the USERIN file. This packet contains the following two flags used in processing the data.

*Emiss/met data time match:* If the hourly emissions data are in local standard time, but the UAM meteorological episode is specified in local standard time, the user should specify "NO" for this option (TMPRL will shift the diurnal profile weights back one hour, and the output hourly emissions will be in local standard time). "YES" for this option indicates that emissions data and meteorological data correspond; accordingly, no profile shift is performed if the user specifies "YES" for this flag.

*Day of the Week:* This flag specifies the day of week of the emission episode. EPS 2.0 processes single-day episodes only.

For more information on these inputs, see the discussion of TMPRL in Section 3.6 of part A of the EPS user's manual.

#### Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. When you have filled all fields and you wish to save the changes, press ENTER to proceed to the next menu. On exit from this screen the interface will write the /TMPRL/ packet to the designated output file. To exit without saving the changes, press PF3/PF15. To abort the setup session, press and return to the EPS 2.0 main menu, PF4/PF16.

**Error Messages**

All fields must be filled for this screen. If you press ENTER before all data have been entered, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## Create UAM Inputs

|  |                    |                    |
|--|--------------------|--------------------|
| 1.436  |                    |                    |
| EPS 2.0: Create UAM Inputs                     |                    |                    |
| 1) USERIN - GRDEM Packet                       |                    |                    |
| 2) USERIN - PSTPNT Packet                      |                    |                    |
| Please enter your selection and press Enter: _ |                    |                    |
| PF1/PF13=Help                                  | PF3/PF15=Prev Menu | PF4/PF16=Main Menu |

This screen appears if option (6) is selected on the Process Emissions Data screen (1.43). It provides the following two options for setting up the input packets needed to generate the UAM input emissions and point source files.

### *USERIN - GRDEM Packet*

Choosing this option will allow you to change or create the /GRDEM/ packet used in generating the low-level UAM emissions file.

### *USERIN - PSTPNT Packet*

Choosing this option will allow you to change or create the /PSTPNT/ packet used in generating the elevated point source input file for the UAM preprocessor PTSRCE.

### Instructions

Input the number of your selection and press ENTER to process your request, or press PF3/PF15 to return to the Process Emission Data screen.

### Error Messages

If you enter an invalid selection number, the following error message will appear:

Press PF15 to Continue  
PLEASE SELECT 1 OR 2.

Press the indicated PF key to return to the screen and enter a valid selection, or press the desired PF key as indicated at the bottom of the screen.

## GRDEM Packet

1.436.1

EPS 2.0: GRDEM Packet

You have specified the following default path/filename to be used:

---

If necessary, please complete the filename above or make any other modifications.

Please press Enter when done. \_

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears if option (1) is selected on the Create UAM Inputs screen (1.436). It displays the USERIN path/filename designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /GRDEM/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /GRDEM/ packet, the next screen will contain blank data fields.

### Instructions

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

### Error Messages

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear.

Press PF15 to Continue

THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER.

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## GRDEM Packet

1.436.11

EPS 2.0: GRDEM Packet

Output file format is UAM emissions file format:\_\_\_ (YES=UAM, NO=EMBR)

Modeling Region Angle of Rotation: \_\_\_\_\_

When finished modifying fields, please press Enter.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the data to be contained in the /GRDEM/ packet of the USERIN file. This packet contains the following two flags used in processing the data.

*Output file format is UAM emissions file format:* To generate a UAM emissions file, you should enter 'YES' for this flag. If you wish to process the data through other EPS modules, you should enter 'NO' to have the output generated in EMBR format. (Note: an EMBR file that contains spatially and temporally allocated emissions may require more disk storage space than is available on your system.)

*Modeling Region Angle of Rotation:* Angle of rotation of the X-Y axis of the modeling domain. This angle is in degrees counter-clockwise from Northing. The value is typically zero.

For more information on these inputs, see the discussion of TMPRL in Section 3.8 of part A of the EPS user's manual.

**Instructions**

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. When you have filled all fields and you wish to save the changes, press ENTER to proceed to the next menu. On exit from this screen the interface will write the /GRDEM/ packet to the designated output file. To exit without saving the changes, press PF3/PF15. To abort the setup session, press PF4/PF16.

## **Error Messages**

All fields must be filled for this screen. If you press **ENTER** before all data have been entered, the following error message will appear:

|   |
|---|
| <p>Press PF15 to Continue</p> <p>PLEASE FILL ALL FIELDS WITH VALID VALUES</p> |
|---|

Pressing **PF15** will return you to the data entry screen and you may fill in the data required.

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

**PSTPNT Packet**

|   |                    |                    |
|---|--------------------|--------------------|
| 1.436.2   |                    |                    |
| EPS 2.0: PSTPNT Packet  |                    |                    |
| You have specified the following default path/filename to be used:                |                    |                    |
| <hr/>   |                    |                    |
| If necessary, please complete the filename above or make any other modifications. |                    |                    |
| Please press Enter when done.   |                    |                    |
| PF1/PF13=Help   | PF3/PF15=Prev Menu | PF4/PF16=Main Menu |

This screen appears if option (2) is selected on the Create UAM Input screen (1.436). It displays the USERIN path/file name designated on screen 1.2 (Input Path and Filename Setup). If the specified file contains a /PSTPNT/ packet, the data will be read and displayed on the subsequent screen. If the file does not contain the /PSTPNT/ packet, the next screen will contain blank data fields.

**Instructions**

If you wish to change the designated pathname or need to enter a filename, move the cursor to the input field and type over the current entry or enter a name. Press ENTER to proceed to the next screen.

**Error Messages**

A valid filename must be designated to continue to the next screen. If a valid filename is not provided, the following message will appear on the screen.

|   |
|---|
| Press PF15 to Continue                                    |
| THE FILE NAME YOU ENTERED DOES NOT EXIST. PLEASE REENTER. |

Press the indicated PF key to return to the screen and enter a valid path/filename, or press the desired PF key as indicated at the bottom of the screen.

## PSTPNT Packet

1.436.21

### EPS 2.0: PSTPNT Packet

Modeling Region Angle of Rotation: \_\_\_\_

When finished modifying fields, please press Enter.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen displays the parameter to be contained in the /PSTPNT/ packet of the USERIN file. This packet contains one flag used in processing the data. The angle of rotation of the X-Y axis of the modeling domain is in degrees counter-clockwise from Northing. The value is typically zero.

For more information on these inputs, see the discussion of PSTPNT in Section 3.7 of part A of the EPS user's manual.

### Instructions

On entry to this screen, the specified input file will be read to determine if data for this packet exists in the file. If this packet is found, the screen will appear with the data fields entered. If this packet is empty or not found on the input file, the screen will appear with blank data fields. After entering data in a field, press TAB to move to the next field. When you have filled all fields and you wish to save the changes, press ENTER to proceed to the next menu. On exit from this screen the interface will write the /PSTPNT/ packet to the designated output file. To exit without saving the changes, press PF3/PF15. To abort the setup session and return to the EPS 2.0 main menu, press PF4/PF16.

### Error Messages

All fields must be filled for this screen. If you press ENTER before all data have been entered, the following error message will appear:

Press PF15 to Continue

PLEASE FILL ALL FIELDS WITH VALID VALUES

Pressing PF15 will return you to the data entry screen and you may fill in the data required.

#### 4.1.3.6 CREATE UAM INPUTS

If a value entered in a field is not considered valid, the system will beep and place the cursor at the wrong entry. To continue, you must enter valid data in the indicated fields. You may then proceed with the session.

## 4.2 GRAPHICS MODULE

The Graphics module can be used to generate a variety of statistical, temporal, and spatial graphics to assist in emission inventory analysis. When you enter the Graphics module by selecting the graphics option on the main menu, you will see the following screen.

```
GRAPHICS MODULE INTRODUCTION

      EMISSIONS PREPROCESSOR SYSTEM 2.0

      GRAPHICS DISPLAY MODULE

Welcome to the EPS 2.0 Graphics Module.  This module can be used to
generate graphical representation and summary table reports of UAM
Emissions files, UAM Point Source files, or EPS EMBR files.

To use this system, use TAB key to move through fields and fill in
needed information.  When all fields are filled press ENTER to
continue to next screen.

      ** PRESS ENTER TO BEGIN **
```

The next series of screens you see will allow you to set up and perform any data extraction necessary to produce the graphics desired.

### Instructions

Press ENTER to continue. Press PF4 or PF16 to abort the Graphics module and return to the main menu.

### Error Messages

None.

## 4.2.1 DATA EXTRACTION

The EPS internal emission binary record (EMBR) files and the UAM input emission files contain large volumes of information. An EMBR file may contain emissions that have been chemically speciated and temporally and spatially allocated. The UAM input files contain gridded hourly Carbon Bond Mechanism species. The extract section of the Graphics module extracts data for selected species in the emissions data. You have control over the size of the extracted data set by specifying how many species are extracted. In this way you are able to work within the amount of SAS "work space" available on your system. Table 4-2 lists the chemical species that can be found in an emissions file. In addition, the extraction transforms the data from a binary format to the SAS-format used in the EPS 2.0 interface. The name of the SAS data file is chosen by the user. If you extracted the data you want in a previous session, the SAS-formatted data file can be read in instead of re-extracting the data from the large emissions files.

TABLE 4-2. Definition of CBM species.

| Species<br>Abbreviation | Species Name  |
|-------------------------|---|
| NO                      | Nitric oxide  |
| NO2                     | Nitrogen dioxide  |
| OLE                     | Olefinic carbon bond (C=C)                                      |
| PAR                     | Paraffinic carbon bond (C-C)                                    |
| TOL                     | Toluene (C*6*H*5*-CH*3*)  |
| XYL                     | Xylene (C*6*H*6*-(CH*3*)*2*)                                    |
| FORM                    | Formaldehyde (CH*2*=O)  |
| ALD2                    | High molecular weight aldehydes (RCHO, R > H)                   |
| ETH                     | Ethane (CH*2*=CH*2*)  |
| CO                      | Carbon monoxide   |
| MEOH                    | Methanol  |
| ETOH                    | Ethanol   |
| ISOP                    | Isoprene  |
| NOX*                    | Nitrogen oxide  |
| VOC*                    | Volatile organic compounds                                      |
| SOX*                    | Sulfur oxide  |
| TSP*                    | Total suspended particulate                                     |
| PM10*                   | Particulate matter with aerodynamic diameter < 10 $\mu\text{m}$ |

\* These species appear only in the EMBR files.

## File Extract Selection

|  |                                 |                    |
|--|---------------------------------|--------------------|
| 1.0  | EPS 2.0: FILE EXTRACT SELECTION |                    |
| Please input whether you wish to use a file that has already been extracted and written to a SAS file or you need to extract a new file. Type 'YES' to extract a new file or 'NO' to use a file that has already been extracted. |                                 |                    |
| File Extract: <u>YES</u>   |                                 |                    |
| If you typed a 'NO' above, please enter the fully qualified data set name with which you wish to generate graphics.<br>Do Not Use Quotes.  |                                 |                    |
| Data Set Name: _____   |                                 |                    |
| PF1/PF13=Help  | PF3/PF15=Prev Menu              | PF4/PF16=Main Menu |

This screen is displayed after pressing ENTER at the Graphics Module Introduction screen. This screen gives you the choice of (1) extracting a UAM binary or EMBR file and writing it to a SAS-formatted file or (2) reading a SAS-formatted file previously extracted.

### Instructions

You must enter "YES" or "NO" in the "File Extract" field. Enter "YES" if you wish to extract a UAM or EMBR file and write it to a SAS-formatted file. Enter "NO" if you wish to read a file previously extracted.

If you enter "YES" in the "File Extract" field, press ENTER to continue. You will then be presented with the series of file selection screens shown on succeeding pages. The program will ignore anything you enter in the "Data Set Name" field since you selected to extract a file.

If you enter "NO" in the "File Extract" field, you must enter the fully qualified name of the SAS data set you would like to use to create graphics. Then press ENTER to continue to the next screen—the Graphic Selection screen shown on pages 4-143.

### Error Messages

If you leave the "File Extract" field blank or enter an invalid response, the following message will be displayed:

```
Press PF15 to continue _____  
YOU MUST ENTER YES OR NO...PLEASE REENTER
```

When you press PF15, the cursor will be placed on the "File Extract" field for you to enter a valid value.

The following error messages can result after entering "NO" in the "File Extract" field:

- (1) If you leave the "Data Set Name" field blank, the following message will be displayed:

```
Press PF15 to continue _____  
DATA SET NAME REQUIRED...PLEASE REENTER
```

- (2) If you enter a nonexistent file in the "Data Set Name" field, the following message will be displayed:

```
Press PF15 to continue _____  
FILE DOES NOT EXIST...PLEASE REENTER
```

- (3) If you enter a file that is not in SAS-format, the following message will be displayed:

```
Press PF15 to continue _____  
FILE IS NOT A SAS FILE...PLEASE REENTER
```

- (4) If you enter the name of a file that was not created by this program, the following message will be displayed:

Press PF15 to continue

FILE WAS NOT CREATED BY THIS PROGRAM...PLEASE REENTER

When you press PF15 the cursor will be placed on the "Data Set Name" field. You then need to enter a new data set name or press PF4 to return to the main menu.

## 4.2.1 DATA EXTRACTION

### File Selection

|  |                        |                    |
|--|------------------------|--------------------|
| 1.1  | EPS 2.0 FILE SELECTION |                    |
| Please enter the fully qualified data set name with which you wish to create graphics, the type of data set, and the name of output SAS data set. If the output data set already exists, it will be overwritten. |                        |                    |
| Do not enclose data set name in quotes   |                        |                    |
| Data set name: <u>useracct.EPS2.BIN(EMISS)</u>   |                        |                    |
| Type of data set: <u>UAMEMIS</u> Name of Study: <u>BATON ROUGE</u>   |                        |                    |
| Output data set name: <u>useracct.EPS2.UAM.SASD.BR1</u>  |                        |                    |
| ** BE SURE TO NOTE THE NAME OF THE OUTPUT DATA SET FOR LATER USE **  |                        |                    |
| Type a '?' in the type field and press ENTER for a list of data set types  |                        |                    |
| PF1/PF13=Help  | PF3/PF15=Prev Menu     | PF4/PF16=Main Menu |

If you enter 'YES' in the File Extract field of the File Extract Selection screen, this screen appears. In this screen you specify the name of the UAM or EMBR data set you want to extract, the type of data set, and the name of the study. You also need to enter the name of the SAS-formatted output data set.

### Instructions

You must supply the fully qualified name of the UAM or EMBR file to extract data from the "Data Set Name" field. Do *not* enclose the data set name in quotes. Note that the input file should be binary and not ASCII or EBCDIC.

The type of input file must be entered in the "Type of Data Set" field. The possible types of files are UAM emissions ("UAMEMIS"), UAM point source ("UAMPT"), or Emissions Model Binary Record ("EMBR") files. If you enter "?" in the "Type of Data Set" field and press ENTER, a list of possible types will be displayed. You may select one by placing the cursor on a member of the list and pressing ENTER. Your selection will be placed in the "Type of Data Set" field for you.

Generally, the "Name of Study" field contains the name of the domain, although you may choose any type of identifier up to 11 characters in length. The identifier you supply is used for default titles and is stored as descriptive information on the output file.

Finally, you must supply the name of the output data set. The name of the data set is chosen by you. If the data set does not exist, you will be asked if you want to create it. Enter "Y" if you wish to create this output data set, or "N" if you do not. If you enter "Y", you will be asked if you want to catalog or delete the data set when you exit the program. If you want the file and its contents to be saved for future sessions, enter "C" and press ENTER. Note that if the data set already exists, the old file will be overwritten by the new file.

When you are finished entering all the necessary information, press ENTER to process your selections.

### Error Messages

An invalid file name in the "Data Set Name" field will result in the following message displayed in the center of the screen:

```
Press PF15 to continue
DATA SET DOES NOT EXIST. PLEASE REENTER DATA SET NAME
```

If you leave the "Type of Data Set" field blank, the following message will be displayed:

```
Press PF15 to continue
VALUE REQUIRED FOR TYPE FIELD. TYPE A ? FOR LIST OF TYPES
```

If you enter an invalid type of data, the following message will be displayed:

```
Press PF15 to continue
INVALID TYPE...PLEASE REENTER
```

The "Type of Data Set" must correspond to the input file. If not, the following message will be displayed:

```
Press PF15 to continue
DATA SET AND TYPE SPECIFIED DO NOT MATCH. REENTER ONE OR BOTH
```

#### 4.2.1 DATA EXTRACTION

If the "Name of Study" field is left blank, the following message will be displayed in center of the screen:

Press PF15 to continue  
VALUE REQUIRED FOR STUDY...PLEASE REENTER

If the "Output Data Set Name" field is left blank, the following message will be displayed:

Press PF15 to continue  
OUTPUT DATA SET NAME REQUIRED...PLEASE REENTER

## Species Extract Selection

1.2

### EPS 2.0: SPECIES EXTRACT SELECTION

Place an S in the selection column for all the species you wish to extract from the file entered on the previous screen.

Press PF20 to scroll down the list, PF19 to scroll up.

After all selections have been made, press PF15 to process selections.

| Selection | Species |
|-----------|---------|
| S         | NO      |
| S         | NO2     |
| -         | OLE     |
| S         | PAR     |
| -         | TOL     |
| -         | XYL     |
| S         | ALD2    |
| -         | ETH     |
| -         | MEOH    |
| -         | ETOH    |

This screen appears after file selection is completed. It allows you to select a subset of species to be extracted from the full emission file. The output file will contain data only for the species you select here.

### Instructions

Type "S" in the "Selection" column in front of the species you want to extract. The list may be longer than the screen. You can scroll down the list by pressing PF20 or scroll up by pressing PF19. After you have made all your selections, press PF15 to process your selections and subset the data.

It is important that you select only the needed species. The input file is extremely large and selecting only the needed species will reduce the time to extract the data. Also, if you select too many species, the program could run out of disk space and result in unpredictable errors.

### Error Messages

None.

## 4.2.1 DATA EXTRACTION

### File Header Information

```
1.3                               EPS 2.0  FILE HEADER INFORMATION                               Pg 1 of 1

Data Set Name: 'useracct.EPS2.BIN(EMISS)'
File Id:  BATONROUGENOXBA%VOCSE%REDUCTION
Filename:  EMISSIONS      Study:  Baton Rouge      Type:  UAMEMIS

Model Run
  Start Day:  11JUL88   Hour:  1      End Day:  11JUL88   Hour:  24
  Number of Species:  3      Number of Segments:  1

Domain
  Columns(x):  66      Rows(y):  6
  Vertical Levels(z):  4      ( Upper  2  Lower  2  )

*** PRESS ENTER TO PERFORM EXTRACT ***

PF3/PF15=Prev Menu      PF4/PF16=Main Menu      PF20=Spatial Description
```

```
Spatial Description                               Pg 2 of 2

UTM Zone:  15
Reference Origin(x):  0      Reference Origin(y):  0
Origin of Grid(x):  608000   Origin of Grid(y):  3300000

Columns(x):  66      Rows(y):  66
Grid Interval(x):  2000   Grid Interval(y):  2000

Vertical Levels(z):  4      ( Upper  2  Lower  2  )
Height to Base of Surface Level:  0
Minimum Height to Lower Level:  50
Minimum Height to Upper Level:  250

*** PRESS ENTER TO PERFORM EXTRACT ***

PF3/PF15=Prev Menu      PF4/PF16=Main Menu      PF19=Domain Description
```

```
INPUT FILE IS BEING EXTRACTED
THIS PROCESS MAY TAKE UP TO 30 MINUTES
```

#### 4.2.1 DATA EXTRACTION

##### File Header Information

|   |                                |
|---|--------------------------------|
| 1.3   |                                |
| EPS 2.0 FILE HEADER INFORMATION               |                                |
| File: 'useracct.EPS2.EMAR(LST000)'            |                                |
| Filename: POINT                               | Study: GEORGIA      Type: EMBR |
| Domain  |                                |
| Columns(x): 40                                | Rows(y): 40                    |
| Grid Interval(x): 4000                        | Grid Interval(y): 4000         |
| UTM Origin(x): 660000                         | UTM Origin(y): 3550000         |
| UTM Zone: 16                                  |                                |
| Speciated: YES                                | Number of Species: 5           |
| Program Version: EPS 2.0 PREAM MODULE V. 1.00 |                                |
| *** PRESS ENTER TO PERFORM EXTRACT ***        |                                |
| PF3/PF15=Prev Menu                            | PF4/PF16=Main Menu             |

|   |
|---|
| INPUT FILE IS BEING EXTRACTED<br>THIS PROCESS MAY TAKE UP TO 30 MINUTES |
|---|

Once a species has been selected, the header information from the input file is the next screen displayed. If you are extracting data from a UAM file, you will see the two-page screen displayed on the previous page. If you are extracting from an EMBR file, you will see the one-page screen shown above. These screens allow you to see information about the input file you want and lets you make sure this file contains the data you want to extract.

##### Instructions

This screen is only an informational screen. If you are extracting a UAM file, you can press PF20 to see page two of the header information and press PF19 to return to page one.

If you decide you do not want to extract this file, you can press PF3/PF15 to return to the File Selection screen to choose a different file. You can also press PF4/PF16 to return to the main menu if you want to restart the program or exit the Graphics module.

#### 4.2.1 DATA EXTRACTION

Press **ENTER** to extract data from the file. A small window will be displayed at the bottom of the screen telling you the file is being extracted and the length of time it may take to extract the data. This screen will remain displayed until the extraction is complete and the next screen is displayed. On some devices, the "Input File Being Extracted" message will blink.

#### Error Messages

If you are extracting from a UAM point source file and the file has no point sources, the following message will be displayed:

```
Press PF15 to continue
NO POINT SOURCES...PLEASE REENTER INPUT FILE
```

If you are extracting from an EMBR file that contains combined files that include different time spans, the following message will be displayed:

```
Press PF15 to continue
COMBINED FILE CONTAINS INCOMPATIBLE DATA
```

When you press **PF15** the message will disappear and you will be returned to the Input File Selection screen, where you can choose a different file for data extraction.



## Graphic Selection

```

2.0

EMISSIONS PREPROCESSOR SYSTEM (2.0)
Graphic Selection

1) STATISTICAL GRAPHICS
   Bar Charts
   Summary Tables

2) TEMPORAL GRAPHICS
   Time Series Graph

3) SPATIAL GRAPHICS
   Shaded Tile Maps

Selection: 1      Device: IBM3179

Type ? on the device field and press ENTER for a list of supported
devices

PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu

```

The Graphic Selection screen is the first panel you will see after extracting a file or reading a previously extracted SAS file. From this screen you can select the type of graphic to display and the type of terminal on which to display it. Hard-copy devices are not supported directly. After displaying the graphic on your terminal you may save it to a SAS graphics library and then plot it separately on the desired hard-copy device using SAS and system-level commands. SAS graphics catalogs are discussed separately in this document (see Section 4.3).

### Instructions

In the "Device" field enter the name of the terminal that you are using or emulating. For a list of supported devices, enter "?" in the "Device" field and press ENTER. Be sure to consult the user's manual supplied by the terminal manufacturer if you are not certain what type of graphics device you are using or emulating. Failure to enter the proper device name on this screen may result in unrecoverable errors when you attempt to display a plot.

If you are using a Tektronix 4207, 4211, or 4224 connected via a coaxial adapter, enter the device name "TCX4207". If you are using one of these devices but *not* with a coaxial connection, use the device name "TEK4207". The devices "IBM3179" and "GDDMPCG" can be entered if you are using or emulating an IBM 3179G terminal; the device "IBM3279" should be selected if you are using or emulating an IBM 3279G terminal.

Anytime you select a terminal from the list, you will also be asked to choose "display" or "no display" mode. If you are generating graphics to view during the current session, choose "display". If you are generating graphics to store in the catalog for later viewing or you are using a device that does not display graphics, choose "no display". Hard-copy devices automatically choose the "no display" option. The display mode that you select will remain in effect until you change devices and display modes.

A value of "1", "2" or "3" should be entered in the "Selection" field to display a specific type of graphic. Samples of the types of graphics available can be found in Section 2 of this document.

When you are done specifying all the necessary information, press ENTER to process your selections.

### Error Messages

If any value other than "1", "2" or "3" is entered in the "Selection" field, the following message will be displayed in the center of the screen:

```
Press PF15 to continue
ENTER EITHER 1, 2, or 3 -OR- PRESS PF13 for HELP
```

If you extracted a UAM point source file and entered a "3" in the "Selection" field, the following message will be displayed:

```
Press PF15 to continue
UAM POINT SOURCE FILES CAN NOT BE PLOTTED SPATIALLY
```

If you extracted an EMBR file that is not temporally allocated and entered a "2" in the "Selection" field, the following message will be displayed:

```
Press PF15 to continue
EMBR FILE NOT TEMPORALLY ALLOCATED. MAKE ANOTHER
SELECTION
```

#### 4.2.2 GRAPHICS SELECTION

If you extracted an EMBR file that is not gridded and entered "3" in the "Selection" field, the following message will be displayed:

```
Press PF15 to continue
EMBR FILE NOT SPATIALLY ALLOCATED.  MAKE ANOTHER
SELECTION
```

When you press PF15, the message will be removed from the screen and the cursor will automatically move to the "Selection" field to allow you to enter either "1", "2" or "3". Press PF13 for related help.

Finally, if you specify a device in the "Device" field that is not in the list of supported terminal devices, the system will display a list of supported devices from which to choose.



### 4.2.3 STATISTICAL GRAPHICS AND TABLES

Statistical graphics and tables are very useful for immediate quantitative comparisons of observations. The EPS 2.0 interface will generate bar charts and summary tables.

- For a quick comparison of multiple species, use a bar chart. A bar chart compares emissions among species, broad source types, or counties.
- For a quick comparison of actual emissions among species, use summary tables showing either the total emissions for each species or hourly emissions for selected species.

## Statistical Graphics Selection

2.1

## EPS 2.0: STATISTICAL GRAPHIC SELECTION

- (1) BAR CHARTS  
Domain Total  
County(s) Total
- (2) SUMMARY TABLES  
Domain Total for Each Species  
Hourly Totals for Limited Species

Selection: 1

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen is displayed when you choose "1" on the Graphic Selection screen. It allows you to select the type of statistical graphic you wish to create. You can choose to display a bar chart or the summary tables using various statistical techniques.

**Instructions**

Choose either a bar chart or summary table by specifying either "1" or "2" in the "Selection" field, respectively, and press ENTER. The next screen displayed will depend on which selection you make.

**Error Messages**

If the "Selection" field is left blank or if it contains a value outside the valid range, the following message will be displayed in the center of the screen:

Press PF15 to continue

ENTER EITHER 1 or 2 -OR- PRESS PF13 for HELP

Press PF15 to continue; the cursor will automatically move to the "Selection" field to allow you to enter a valid value.

## Summary Tables

2.1.2

### EPS 2.0: SUMMARY TABLES

The following tables will be produced:

- (1) Emissions totals for each species over the entire domain summed from hour 1 to hour 24.
- (2) Hourly emissions totals for each of the species:  
(temporally allocated data only)

\*\*\* PRESS ENTER TO CALCULATE VALUES AND PRODUCE TABLES \*\*\*  
\*\* IT MAY TAKE UP TO 15 MINUTES TO PRODUCE EACH TABLE\*\*

NOTE: To view the remainder of each table, type 'DOWN' on the COMMAND line and press ENTER until you reach the bottom of the last table and the upper right hand corner of the screen reads "DM statement running." Type 'END' on the COMMAND line and press enter to return to the program.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This is the next screen you see if you choose "2" on the Statistical Selection screen. This screen allows you to generate two types of summary tables: total emissions for all the species in the input file and hourly emissions for selected species.

### Instructions

There are no fields to be filled in on this screen. Press ENTER to display tables.

The tables will usually not fit in one window. To view the rest of the tables, type "DOWN" on the COMMAND line and press ENTER. Continue to type "DOWN" and press ENTER until a message appears "DM statement running" in the upper right corner of the screen. At this point you can save the tables into a text file (explained in the next paragraph) or type "END" on the COMMAND line and press ENTER to return to the Graphics Selection screen.

Since these tables are not graphics, they cannot be saved into a graphics catalog. However, you can save these tables into a text file for later use. To save the tables, type "FILE <file name>" on the COMMAND line and press ENTER. The <file name> is the name of the file of tables you wish to save. You might wish to make a note of the name for

later use. Once you press **ENTER**, a message will appear telling you the number of lines saved. The message will look similar to this: "100 line(s) written to external file". Now type "END" on the **COMMAND** line and press **ENTER** to return to the Graphics Selection screen.

#### **Error Messages**

None.

## Bar Chart Analysis Selection

2.1.1

### EPS 2.0: BAR CHART ANALYSIS SELECTION

Period of Interest: Start Day 11JUL88 Hour 1  
End Day 11JUL88 Hour 24

Selection: 1 DOMAIN TOTAL (1) Selected Species  
(2) Broad Source Types  
COUNTY TOTAL (3) Selected Species for One County  
(4) Broad Source Types for One County  
(5) One Species for Selected Counties

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This is the next screen you see if you choose selection "1" on the Statistical Selection screen. This screen allows you to select the type of bar chart you would like to create. You can choose to display the domain totals or the county totals for species or broad source types (low-level point, elevated point, mobile, and area sources).

### Instructions

You must determine the period of interest for the type of bar chart that you selected. This consists of starting and ending dates and times; the values you specify must correspond to the extracted data from the input file.

For example, if you have extracted data for hours 1 to 24 on July 11, 1988, then you must enter "11JUL88" in the "Start Day" and "End Day" fields and may choose any range of hours between 1 and 24 for the "Start Hour" and "End Hour" fields. The only restriction is that the starting hour must be earlier than the ending hour. You must be careful to supply accurate values. Failure to do so will result in unpredictable errors.

By filling in the "Selection" field, you determine the variable used to compute total emissions and the area to include in the calculations. By typing a "1" or "2", the entire domain is included in the analysis; a "3" or "4" means one county is used in the analysis; a "5" means several selected counties will be in the analysis.

92020r2d.04

### 4.2.3 STATISTICAL GRAPHICS

You can use select total emissions of species or source types for analysis. The values "1", "3" and "5" in the "Selection" field correspond to species and the values "2" and "4" to source types.

When you are done specifying all the necessary information, press **ENTER** to process your selections.

#### Error Messages

If the "Selection" field is left blank or if it contains a value outside the valid range, the following message will be displayed in the center of the screen:

```
Press PF15 to continue
VALID ANALYSIS VALUES ARE 1-5. PLEASE REENTER.
```

If you extracted a UAM file and typed "2", "3", "4", or "5" in the "Selection" field, the following message will appear:

```
Press PF15 to continue
ONLY VALID ANALYSIS FOR UAM FILES IS 1. PLEASE REENTER.
```

If you entered "2" or "4" in the "Selection" field and did not extract an EMBR combined file, the following message will be displayed:

```
Press PF15 to continue
FILE DOES NOT CONTAIN MULTIPLE SOURCE TYPES...MAKE ANOTHER SELECTION
```

Press **PF15** to continue and the cursor will be placed at the field for which a valid value is required.

Blank or improper date fields will result in the following error:

```
— Press PF15 to continue —  
START DAY MUST BE THE SAME AS END DAY. PLEASE REENTER.
```

If the "Start Hour" or "End Hour" fields are blank, <1, or >24, the following message will appear:

```
— Press PF15 to continue —  
TIME VALUES RANGE IS 1-24 INCLUSIVE. PLEASE REENTER.
```

If the "Start Hour" field is greater than the "End Hour" field, the following message will appear:

```
— Press PF15 to continue —  
START TIME MUST PRECEDE END TIME. PLEASE REENTER.
```

If the time periods entered in the "Start Day", "End Day", or "Hour" fields are not consistent with the time period of data in your file, the following message will appear:

```
— Press PF15 to continue —  
DATE/TIME RANGE ENTERED:  
Start Day: 11JUL88 Hour: 1 End Day: 11JUL88 Hour: 24  
OUTSIDE RANGE OF FILE DATE/TIME:  
Start Day: 11JUL88 Hour: 13 End Day: 11JUL88 Hour: 24  
PLEASE ENTER A NEW DATE/TIME RANGE OR RETURN TO FILE  
EXTRACT SELECTION SCREEN AND CHOOSE A NEW INPUT FILE
```

When you press PF15, the cursor will be placed on the "Start Day" or "End Day" field. At this point you must enter a new date/time range or return to the File Extract Selection screen and extract a new file. To return to the File Extract Selection screen, press PF4 to go to the main menu and restart the Graphics module.

## Species Subset Selection

```
Species Subset

      EPS 2.0:  SPECIES SUBSET SELECTION

              (1) All Species
              (2) Subset Species
              (3) Previous Subset

      Selection:  2

PF1/PF3=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu
```

## County Subset Selection

```
County Subset

      EPS 2.0:  COUNTY SUBSET SELECTION

              (1) All Counties
              (2) Subset Counties
              (3) Previous Subset

      Selection:  2

PF1/PF3=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu
```

The Species Subset Selection screen is displayed when you choose "1" on the Bar Chart Analysis Selection screen or when you choose a single county from the County Selection screen (explained later in this section). The County Subset Selection screen is displayed if you choose "5" on the Bar Chart Analysis Selection screen. Both screens are similar in appearance and purpose. These screens allow you to select the subset of species or counties you would like to use in your analysis.

## Instructions

A value of "1", "2", or "3" should be entered in the "Selection" field. By entering "1" the program will assume you want to use all the species or counties in your analysis. By entering "2" the program will let you choose the species or counties you wish to use on the next screen. By entering "3" the program will assume you would like to use the subset previously defined in the current session.

Selection "3" can be chosen only after you have run selection "1" or "2" earlier in the current session. The subset is not retained when you exit the program.

Remember, selection "3" uses the most recently created subset. If you ran selection "2" and created a subset and then ran selection "1" and used all the species or counties, selection "3" will assume you want to use all the species or counties again.

When you have made your subset selection, press **ENTER** to process your selection.

## Error Messages

If the selection field is left blank, the following message will be displayed on the screen:

```
Press PF15 to continue
SELECTION REQUIRED...PLEASE REENTER
```

If any value other than "1", "2", or "3" is entered in the "Selection" field, the following message will be displayed:

```
Press PF15 to continue
VALID SELECTIONS ARE 1, 2, OR 3
```

#### 4.2.3 STATISTICAL GRAPHICS

If you enter "3" on the "Selection" field before running "1" or "2", the following message will be displayed.

```
— Press PF15 to continue —  
SELECTION 3 ONLY VALID AFTER SELECTION 1 OR 2 HAS BEEN RUN
```

When you press **PF15**, the message will disappear and the cursor will be placed on the "Selection" field to allow you to enter a valid value.

## Species Selection List

### Species Selection

#### EPS 2.0: SPECIES SELECTION LIST

Place an S in the selection column for all the species to be used in the chosen analysis.

Press PF20 to scroll down the list, PF19 to scroll up.

After all selections have been made, press PF15 to save selections.

| Selection | Species |
|-----------|---------|
| S         | NO2     |
| S         | NO      |
| -         | PAR     |
| -         | FORM    |
| -         | ALD2    |

## County Selection List

### County Selection

#### EPS 2.0: COUNTY SELECTION LIST

Place an S in the selection column for all the counties to be used in the chosen analysis.

Press PF20 to scroll down the list, PF19 to scroll up.

After all selections have been made, press PF15 to save selections.

| Selection | Counties      |
|-----------|---------------|
| S         | BANKS, GA     |
| -         | BARROW, GA    |
| -         | BARTOW, GA    |
| S         | BUTTS, GA     |
| -         | CARROLL, GA   |
| -         | CHATTOOGA, GA |
| S         | CHEROKEE, GA  |
| S         | CLAYTON, GA   |
| S         | COBB, GA      |
| -         | COWETA, GA    |
| -         | DAWSON< GA    |

The Species Selection screen will be displayed when you choose "2" on the Species Subset Selection screen. The County Selection screen will be displayed if you had chosen "2" on the County Subset Selection screen. These screens allow you to choose the species or counties you wish to include in the subset.

### **Instructions**

The species selection list will contain all the extracted species present within the entire domain or selected counties. The county selection list contains all the counties within the entire domain. The list may be longer than screen. Press **PF20** to scroll down the list and **PF19** to scroll up.

Type "S" in the "Selection" column next to the species or county you want in the subset. When you have completed making your selections, press **PF15** to save the subset. The screen will close and the next screen will be displayed. If you are selecting species, the next screen displayed will be the Title/Description Screen. If you are selecting counties, the next screen displayed will be the Species Selection Screen (explained on the next page).

## Species Selection List

### Species Selection

#### EPS 2.0: SPECIES SELECTION LIST

Place cursor on the species you wish to use in the chosen analysis and press ENTER to select.

Press PF20 to scroll down the list, PF19 to scroll up.

Press PF15 after you have made your selection.

#### Species

NO2  
NO  
PAR  
FORM  
ALD2

## County Selection List

### County Selection

#### EPS 2.0: COUNTY SELECTION LIST

Place cursor on the county you wish to use in the chosen analysis and press ENTER to select.

Press PF20 to scroll down the list, PF19 to scroll up.

Press PF15 to process your selection.

#### Counties

BANKS, GA  
BARROW, GA  
BARTOW, GA  
BUTTS, GA  
CARROLL, GA  
CHATTOOGA, GA  
CHEROKEE, GA  
CLAYTON, GA  
COBB, GA  
COWETA, GA  
DAWSON, GA

### 4.2.3 STATISTICAL GRAPHICS

The Species Selection screen will be displayed after one of three different screens, depending on the analysis chosen. The Species Selection screen is displayed when you choose "2" on the Bar Chart Analysis Selection screen, after you have selected a subset of counties (explained earlier) or a single county. The County Selection screen is displayed if you choose "3" or "4" on the Bar Chart Analysis Selection screen. These screens look similar to the previously mentioned selection screens, but are different. These screens allow you to choose *one* species or county from the list.

#### Instructions

The Species Selection screen will contain all the extracted species present within the entire domain or a selected county(s) domain and the County Selection screen will contain all the counties within the entire domain. The list may be longer than the screen. Press PF20 to scroll down the list or PF19 to scroll up. Use the arrow keys to move up and down the list on the screen. *Do not* use the TAB key. Since these fields are protected, the cursor will move off the list (see Section 3.4.7 Protected Fields).

Place the cursor on the species or county you wish to select; the selection will be highlighted. Press ENTER to select. When you have made a selection, press PF15 to process your selection. The screen will close and the next screen will be displayed. If you select a species, the next screen will be the Title/Description screen. If you select a county, your next screen will be one of the two Species Selection screens, depending on the analysis selected on the Bar Chart Analysis Selection screen.

#### Error Messages

If you press ENTER without selecting a species or county, one of the following messages will be displayed:

Press PF15 to continue  
PLEASE SELECT A SPECIES

Press PF15 to continue  
PLEASE SELECT A COUNTY

When you press PF15, the message will disappear and the selection list will be redisplayed.

## Graphic Title/Description Specification

2.4

### EPS 2.0: GRAPHIC TITLE/DESCRIPTION SPECIFICATION

Enter title, footnote, and label information. Skip fields not desired. Default values can be overwritten. Do not use quotes. Size unit is cells.

| TEXT  | COLOR | FONT | SIZE |
|---|-------|------|------|
| Title #1<br>GEORGIA UAM EMISSION                              | WHITE | NONE | 1.0  |
| Title #2<br>11JUL88, OVER THE HOURS 1 TO 6                    | WHITE | NONE | 1.0  |
| Title #3<br>DOMAIN TOTALS                                     | WHITE | NONE | 1.0  |
| Footnote #1   |       |      |      |
| Footnote #2   |       |      |      |
| Vertical Axis<br>TOTAL EMISSIONS                              | WHITE | NONE | 1.0  |
| Horizontal Axis<br>SPECIES                                    | WHITE | NONE | 1.0  |
| PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu |       |      |      |

This screen appears after one of the Species Selection screens (see Figure 3-1). In this screen you specify titles, footnotes, and axis labels along with their respective color, font, or text size. Where possible, default values based upon user inputs are provided.

### Instructions

You can specify up to three titles and two footnotes for any given graphic. Simply type the text of the title or footnote in the "Text" fields and then choose the corresponding color, font, and size. Be sure the color you specify is supported by the device you are using. Generally, it is a good idea to use white for display on a terminal and black for printing on a hard-copy device. You may enter any valid color supported by your graphics device. A complete discussion of SAS/Graph colors may be found in *SAS/Graph Software Reference, Version 6*, (Volume 1, Chapter 7).

92020r2d.04

### 4.2.3 STATISTICAL GRAPHICS

Next, you will want to choose a font to print the text of your title or footnote. A font value of "NONE" tells the system to use the hardware characters of the output device to compose the text.

This is a very simple font, but suitable for most applications. This font is also drawn faster than any other font, so it should be used to save time or preview graphics.

Finally, you will need to specify the size of the characters printed in the title or footnote. The "Size" field is in the units of cells of the graphic output area. We recommend that you try using the value "1.0" in the "Size" field first, and then change it if you find that the result is not acceptable. Using a large value of "Size" can cause awkward looking titles.

Keep in mind that titles and footnotes take up space that can be used for displaying the data plot itself. Thus, if you specify three titles and two footnotes, the plot will be smaller than if you specified one title and one footnote. Similarly, the size (specified in the "Size" field) of the title or the footnote affects the size of the display area for the plot. For this reason, you should judiciously choose the number and size of the titles and footnotes.

Axis labels are specified in the same way as titles and footnotes. Generally it is a good idea to use the same color and font for labels and titles, but this is completely up to you.

When you are done specifying all the necessary information, press ENTER to process your selections.

#### Error Messages

The "Title #1" field is required for all graphics. If the title line is left blank or if the corresponding "Color", "Font", or "Size" fields are left blank, the following message is displayed:

```
Press PF15 to continue
A VALUE IS REQUIRED AT THE CURSOR LOCATION.
```

The "Vertical Axis" and "Horizontal Axis" fields are required for certain graph types. If these fields are required and are left blank, the following message is displayed:

```
Press PF15 to continue
A VALUE IS REQUIRED IN THIS FIELD FOR THIS GRAPH TYPE.
```

When the "Vertical Axis" and "Horizontal Axis" fields are required, the corresponding "Color", "Font", and "Size" fields are also required. Leaving any of these blank at these times will result in the following message:

Press PF15 to continue  
A VALUE IS REQUIRED AT THE CURSOR LOCATION.

If any of the above error messages is encountered, press PF15 and enter the required data at the cursor location.

**Value Calculation Message**

2.5

**EPS 2.0: VALUE CALCULATION MESSAGE****PRESS ENTER TO CALCULATE VALUES AND DETERMINE AXIS SCALING****PROCESS COULD TAKE SEVERAL MINUTES****PF1/PF13=Help****PF3/PF15=Prev. Menu****PF4/PF16=Main Menu****CALCULATING VALUES FOR GRAPHIC AND AXES**

The Value Calculation Message screen provides status information. The upper screen will appear after you have entered the necessary title and label information in the Graphic Title/Description Specification screen. The screen informs you that there will be a delay while the intensive calculations required to construct the graph are performed.

**Instructions**

Press ENTER to continue. After you press ENTER, the lower screen will appear and remain until the Bar Chart Axis Scaling Screen is displayed.

**Error Messages**

None.

## Bar Chart Axis Scaling

2.5.1.

### EPS 2.0: BAR CHART AXIS SCALING SCREEN

|   | Calculated<br>Axis Values | Data Values | Selected<br>Axis Values |
|---|---------------------------|-------------|-------------------------|
| Maximum   | 1000                      | 974.3       | <u>980</u>              |
| Minimum   | 0                         | 0.034       | <u>0</u>                |
| Step  | 100                       |             | <u>98</u>               |
| PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu |                           |             |                         |

CALCULATING VALUES AND PLOTTING GRAPH  
AFTER SCREEN GRAPHIC HAS BEEN CREATED,  
PRESS ENTER FOR DISPOSITION OPTIONS

This screen follows the Value Calculation Message screen. The Axis Scaling screen allows you the option of altering the scale on the vertical axis of plots.

### Instructions

The "Calculated Axis Values" column and the "Data Values" column are informational. The "Calculated Axis Values" column gives you suggested values for the vertical axis based on the actual maximum and minimum data values displayed in the "Data Values" column. The actual values used in drawing the chart will be the values you enter in the "Selected Axis Values" column.

Enter your "Selected Axis Values" and press ENTER. After you press ENTER, the lower screen will appear and remain until the graphic is displayed. On some devices this message will blink.

Keep in mind that the "Selected Axis Values" column defaults to your previously entered values. If you change the plot variable, the "Selected Axis Values" column may need to be changed.

**Error Messages**

Four errors are possible from the Axis Scaling screen.

- (1) If the maximum "Selected Axis Value" is less than the maximum "Data Value", the following error message is displayed:

Press PF15 to continue  
DATA VALUES GREATER THAN MAXIMUM AXIS VALUE...REENTER.

- (2) If the minimum "Selected Axis Value" is greater than the minimum "Data Value", the following error message is displayed:

Press PF15 to continue  
DATA VALUES LESS THAN MAXIMUM AXIS VALUE...REENTER.

- (3) If the difference between the maximum and minimum "Selected Axis Value" is not equally divisible by the selected axis step value, the following message is displayed:

Press PF15 to continue  
RANGE NOT EQUALLY DIVISIBLE BY STEP VALUE...REENTER.

- (4) If the step value is too small and creates more increments than will fit on the vertical axis of the graph, the following message is displayed.

Press PF15 to continue  
STEP VALUE TOO SMALL...PLEASE REENTER.

In each case press PF15 and the cursor will be placed on the appropriate field. Refer to the "Data Values" column, reenter valid values, and press ENTER when done.

At this point your graphic will be displayed on the screen; when you are through viewing it, press ENTER to continue.

2.6

## EPS 2.0: TERMINATION SELECTION

Choose the action you would like to take.

- 1) Change Device, Plot Type, or Starting/Ending Conditions
- 2) Change Input Data Set
- 3) Change Cutoff Values or Titles
- 4) Redisplay the Graphic
- 5) Save the Graphic
- 6) Exit EPS 2.0 Graphic Module (Without Saving Graphic)

Selection: 5

This screen appears after pressing **ENTER** when the graphic is on the screen. It provides a number of options for saving, redisplaying, modifying, or recreating graphics as well as exiting the Graphics module. Depending on your response, you will be transferred to the appropriate screen, where you can make any changes.

**Instructions**

A value between "1" and "6" must be entered in the "Selection" field at the bottom of this screen. A description of the six possible options follows. If you would like more information regarding any screen discussed below, refer to the screen descriptions presented earlier in this section.

*Option 1 – Change Device, Plot Type, or Starting/Ending Conditions*

Selecting this option returns you to the Graphic Selection screen, where you can change the device type or the type of graphic being generated. After making any changes and processing the selections, the Statistical Graphic Selection screen (or the corresponding screen if you changed the plot type) will be displayed, allowing you to change the starting and ending condition.

*Option 2 – Change Input Data Set*

When this option is selected, you will be returned to the File Extract Selection screen, where you decide whether to extract another file or read a SAS file already created.

*Option 3 -- Change Cutoff Values or Titles*

The Graphic Title/Description Specification screen is displayed when this option is displayed. From there you can change the titles, footnotes, or axis labels along with their respective colors, fonts, and sizes.

*Option 4 -- Redisplay the Graphic*

Selecting this option will cause the graphic that was just viewed to be redisplayed on your terminal screen. This option is mostly for your convenience, to allow you a quick method of reviewing the last graphic without going through all the steps to recreate it.

*Option 5 -- Save the Graphic*

The Save Graphic screen (discussed later in this section) is displayed when you choose this option. This screen allows you to specify the name of the data set that will contain the SAS Graphics Catalog as well as descriptive fields that will later aid in identifying the graphic.

*Option 6 -- Exit Graphic Module (Without Saving Graphic)*

By selecting this option you leave the Graphics module without saving the graphic that was just created. All open files will be closed and you will be returned to the EPS main menu.

When you are done specifying the value for "Selection", press ENTER to process your selection.

**Error Messages**

If any value other than "1" through "6" is entered in the "Selection" field, the following message will be displayed in the center of the screen:

Press PF15 to continue  
YOU MUST ENTER A VALUE FROM 1-6 INCLUSIVE TO CONTINUE.

After you press PF15, the cursor will be placed on the "Selection" field to allow you to enter a value between "1" and "6".

## Save Graphic Screen

2.7

### EPS 2.0: SAVE GRAPHIC SCREEN

Please enter below the Fully Qualified Data Set Name of the Graphics Catalog to be created or modified.

Do not enclose the Data Set Name in Quotes

Graphics Catalog DSN: uidacct.EPS2.GCAT

Enter the NAME and Description of this graphic. This information will be stored in the Graphics Catalog and will aid in identifying the plot.

Name: BAR

Description: DOMAIN TOTAL SELECTED SPECIES

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen allows you to permanently save any or all graphics you generate in a device-independent SAS Graphics Catalog. Because the file is device-independent, you can display these graphics later on any graphics device and change as many colors you desire.

You will be asked for the name of the data set that will contain the graphics catalog as well as some descriptive information that will aid in later identification of the plot. If the data set name you supply already exists, the file will be kept and the current graphic will be added to the catalog. No default data set name is supplied, but suggested descriptive information is furnished.

### Instructions

Enter the fully qualified name of the data set you wish to use for the SAS Graphics Catalog in the space provided. Do not enclose the data set name in quotes.

The "Name" and "Description" fields are required and are used to identify the type of graphic in the catalog without displaying it on the terminal screen.

If meaningful values of "Name" and "Description" were supplied when a graphic was generated, you should be able to easily identify the graphic. For this reason, we recommend that you use the default terms supplied.

The default term in the "Name" field is "BAR" for a bar chart. The default terms in the "Description" field is always of the form:

study start-day analysis

where

study = the "STUDY" variable supplied in the Extract module  
 start-day = the start date for this graphic  
 analysis = the analysis chosen for the graphic

Thus the default description for a bar chart showing the total emissions for selected species over the entire Baton Rouge domain on July 11, 1988 would be:

BATON ROUGE 11JUL88 DOMAIN TOTAL SELECTED SPECIES

and the default name would be "BAR".

When you are done specifying all the necessary information, press **ENTER** to process your selections.

If the data set you specified already exists, it will be kept and the current graphic will be added to it. If the data set does not exist, you will be asked if you want to create it. If you do not, enter "N" and press **ENTER**. If you enter "Y", you will be asked if you want to catalog or delete the data set upon exiting the system. If you want the catalog and its contents to be saved for use in future SAS sessions, enter "C" and press **ENTER**.

The screen will clear and the next screen displayed will be the PROC GREPLAY screen. For complete information on using PROC GREPLAY, see Chapter 36 of the *SAS/GRAPH Software Reference, Version 6*. When you are finished using the Graphics Catalog, press **PF15** to return to the Termination Selection screen.

### Error Messages

None.



#### **4.2.4 TEMPORAL GRAPHICS**

Temporal graphics portray changes in model results over time. The EPS 2.0 interface provides one type of temporal graphic: the time series plot.

- For a comparison of multiple species or source types over time, use the time series plot. Like its statistical counterpart, the bar chart, the time series plot compares species or broad categories of sources.



## Time Series Analysis Selection

```

2.2
      EPS 2.0:  TIME SERIES ANALYSIS SELECTION

Period of Interest:  Start Day 11JUL88  Hour  1
                    End Day  11JUL88  Hour  24

Selection:  3 DOMAIN TOTALS  1) Species
                                           2) Source Types
                                COUNTY TOTALS  3) Species
                                           4) Source Types

PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu

```

This screen allows you to select the type of data you wish to display in a time series. You also choose the time period for the selected analysis.

### Instructions

You must determine the period of interest for the type of analysis that you selected. This consists of starting and ending dates and times, corresponding to the extracted data from the input file.

For example, if you have an extracted data set containing data for hours 1 to 24 on July 11, 1988, then you must enter "11JUL88" in the "Start Day" and "End Day" fields and may choose any range of hours between 1 and 24 for the "Start Hour" and "End Hour" fields. The only restriction is that the starting hour needs to be less than the ending hour. Because there is no input validation applied to these fields, you must be careful to supply valid values.

By filling in the "Selection" field, you determine the variable that is displayed in the graphic. You can choose to graph total emissions for either selected species or source types. Enter a "1" or "3" to plot species or a "2" or "4" to plot source types. You can also choose the domain included in the calculation of total emissions. Selections "1" and "2" include the entire domain and selections "3" and "4" include a selected county domain.

When you are done specifying all the necessary information, press ENTER to process your selections.

### Error Messages

Leaving the "Selection" field blank or entering a value other than "1", "2", "3", or "4" will result in the following message in the center of the screen:

```
Press PF15 to continue
VALID SELECTIONS INCLUDE 1, 2, 3, OR 4
```

If you extracted a UAM file and entered a value other than "1", the following message will be displayed:

```
Press PF15 to continue
ONLY VALID ANALYSIS FOR UAM FILES IS 1...PLEASE REENTER
```

If you entered "2" or "4" for source types and did not extract an EMBR combined file, the following message will be displayed:

```
Press PF15 to continue
FILE DOES NOT CONTAIN MULTIPLE SOURCE TYPES...
MAKE ANOTHER SELECTION
```

Press PF15 to continue and the cursor will be placed on the "Selection" field to allow you to enter a valid value.

Blank or improper date fields can result in the following error:

```
Press PF15 to continue
START DAY MUST BE THE SAME AS END DAY. PLEASE REENTER.
```

#### 4.2.4 TEMPORAL GRAPHICS

If a "Start Hour" or "End Hour" field is blank, < 1, or > 24, the following message will appear:

```
— Press PF15 to continue —  
TIME VALUES MUST BE BETWEEN 1 AND 24. PLEASE REENTER
```

If the "Start Hour" field is greater than the "End Hour" field, the following message will appear:

```
— Press PF15 to continue —  
START TIME MUST PRECEDE END TIME. PLEASE REENTER.
```

If the time entered in the "Start Day", "End Day", or "Hour" fields does not fall within the time period of data contained in the extracted file, the following message will appear:

```
— Press PF15 to continue —  
DATE/TIME RANGE ENTERED  
Start Day: 11JUL88 Hour: 1 End Day: 11JUL88 Hour: 24  
OUTSIDE RANGE OF FILE DATE/TIME:  
Start Day: 11JUL88 Hour: 13 End Day: 11JUL88 Hour: 24  
PLEASE ENTER A NEW DATE/TIME RANGE FOR RETURN TO FILE  
EXTRACT SELECTION SCREEN AND CHOOSE A NEW INPUT FILE
```

When you press PF15, the cursor will be placed on the "Start Day" or "End Day" field. At this point you must enter a new date/time range or return to the File Extract Selection screen and extract a new file. To return to the File Extract Selection screen, press PF4 to go to the EPS main menu and restart the Graphics module.

## Times Series Species Selection

| EPS 2.0: TIMES SERIES SPECIES SELECTION   |       |                    |            |       |                    |       |       |
|---|-------|--------------------|------------|-------|--------------------|-------|-------|
| Enter up to ten species, line type, and line color. Do not skip lines. Type a ? in Line Color field for a list of colors. |       |                    |            |       |                    |       |       |
| Species   |       | Line Type          | Line Color |       |                    |       |       |
| NO  |       | 1                  | Red        |       |                    |       |       |
| NO2   |       | 1                  | Blue       |       |                    |       |       |
| CO  |       | 1                  | Yellow     |       |                    |       |       |
| SO2   |       | 1                  | Green      |       |                    |       |       |
| _____   |       | _____              | _____      |       |                    |       |       |
| _____   |       | _____              | _____      |       |                    |       |       |
| _____   |       | _____              | _____      |       |                    |       |       |
| _____   |       | _____              | _____      |       |                    |       |       |
| _____   |       | _____              | _____      |       |                    |       |       |
| _____   |       | _____              | _____      |       |                    |       |       |
| NO2   | NO    | PAR                | FORM       | ALD2  | _____              | _____ | _____ |
| _____   | _____ | _____              | _____      | _____ | _____              | _____ | _____ |
| _____   | _____ | _____              | _____      | _____ | _____              | _____ | _____ |
| _____   | _____ | _____              | _____      | _____ | _____              | _____ | _____ |
| PF1/PF13=Help   |       | PF3/PF15=Prev Menu |            |       | PF4/PF16=Main Menu |       |       |

If you selected to use species as the plot variable, you will see this screen.

This screen allows you to select the species included in the time series plot as well as the type of line to be drawn and the color of the line. A minimum of one species is required, and up to 10 can be specified.

### Instructions

Enter the name of the species you wish to plot in the "Species" column. A list of species extracted from the input file is provided for you on the bottom of the screen. Be sure to enter species names on consecutive lines. When the system encounters a blank species name (after the first which are required), it assumes that species entry is complete. Any species after the blank species is ignored.

#### 4.2.4 TEMPORAL GRAPHICS

Next to each species name, you must enter the type of line, and the corresponding color that you wish to use in plotting the data. Valid line types can be found in the *SAS/GRAPH User's Guide, Version 6*. As on previous screens, colors may be selected by typing "?" in the "Line Color" field and pressing ENTER, or by typing in a color name.

When you are done specifying all the necessary information, press ENTER to process your selections.

#### Error Messages

"Species" field 1 is required; leaving the field blank will result in the following message:

```
— Press PF15 to continue —  
SPECIES CANNOT BE LEFT BLANK...ENTER SPECIES NAME
```

Entering an invalid species name in any of the 10 fields will result in the following message:

```
— Press PF15 to continue —  
INVALID SPECIES...PLEASE REENTER.
```

All nonblank data sets must have a "Line Type" and "Line Color". Leaving any of these fields blank will result in the following error message:

```
— Press PF15 to continue —  
VALUE REQUIRED AT CURSOR POSITION.
```

## Species Selection List

### Species Selection

#### EPS 2.0: SPECIES SELECTION LIST

Place cursor on the species you wish to use in the chosen analysis and press ENTER to select.

Press PF20 to scroll down the list, PF19 to scroll up.

Press PF15 to process your selection.

#### Species

NO2  
NO  
PAR  
FORM  
ALD2

## County Selection List

### County Selection

#### EPS 2.0: COUNTY SELECTION LIST

Place cursor on the county you wish to use in the chosen analysis and press ENTER to select.

Press PF20 to scroll down the list, PF19 to scroll up.

Press PF15 to process your selection.

#### Counties

BANKS, GA  
BARROW, GA  
BARTOW, GA  
BUTTS, GA  
CARROLL, GA  
CHATTOOGA, GA  
CHEROKEE, GA  
CLAYTON, GA  
COBB, GA  
COWETA, GA  
DAWSON, GA

If you selected source types for a time series, the Species Selection List will be displayed. This screen allows you to select the species you wish to use for the source analysis. If you selected a county domain, the County Selection List will be displayed. This screen allows you to choose the county you would like to use as the domain for your time series plot. Both screens are used in the same manner.

### Instructions

Use the up and down arrow keys to move the cursor to the species or county you would like to select. Do *not* use the TAB key. The list may be longer than the screen. Press PF20 to scroll down the list and PF19 to scroll up. To select a species or county, move the cursor to your choice and press ENTER. Your selection will be highlighted.

You can change your selection. One way to change the selection is to place the cursor on your current selection and press ENTER. This will unselect the current selection and then you can move the cursor to make a different selection. Another way to change your selection is to move the cursor to the new selection and press ENTER. This will unhighlight your previous choice and highlight your new choice.

Press PF15 after you have made a selection to continue to the next screen.

### Error Messages

If you press PF15 without having made a selection, one of the following messages will be displayed:

Press PF15 to continue

PLEASE SELECT A COUNTY

Press PF15 to continue

PLEASE SELECT A SPECIES

When you press PF15, the message will disappear and the appropriate screen will be displayed again for you to make a selection.

## Graphic Title/Description Specification

2.4

### EPS 2.0: GRAPHIC TITLE/DESCRIPTION SPECIFICATION

Enter title, footnote, and label information. Skip fields not desired. Default values can be overwritten. Do not use quotes. Size unit is cells.

| TEXT                                | COLOR | FONT | SIZE |
|-------------------------------------|-------|------|------|
| Title #1                            |       |      |      |
| GEORGIA UAM EMISSIONS               | WHITE | NONE | 1.00 |
| Title #2                            |       |      |      |
| CHATTOOGA, GA COUNTY SPECIES TOTALS | WHITE | NONE | 1.00 |
| Title #3                            |       |      |      |
| <hr/>                               |       |      |      |
| Footnote #1                         |       |      |      |
| <hr/>                               |       |      |      |
| Footnote #2                         |       |      |      |
| <hr/>                               |       |      |      |
| Vertical Axis                       |       |      |      |
| TOTAL EMISSIONS (MOLES)             | WHITE | NONE | 1.00 |
| Horizontal Axis                     |       |      |      |
| HOUR                                | WHITE | NONE | 1.00 |

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears after one of the species selection screens (see Figure 3-1). In this screen you specify titles, footnotes, and axis labels along with their respective color, font, and text size where possible, default values based on user inputs are provided.

### Instructions

You can specify up to three titles and two footnotes for any given graphic. Simply type the text of the title or footnote in the "Text" fields and then choose the corresponding color, font, and size. Be sure that the color you specify is supported by the device you are using. Generally, it is a good idea to use white for display on a terminal and black for printing on a hard-copy device.

#### 4.2.4 TEMPORAL GRAPHICS

Next, you will want to choose a font to print the text of your title or footnote. If you enter "None", the system will use the hardware characters of the device to compose the text. This is usually a very simple font, but suitable for most applications. It is also likely to be drawn faster than any other font, and so should be used if you want to save time or preview graphics.

Finally, you will need to specify the size of the characters printed in the title or footnote. The units of the "Size" field is cells of the graphic output area. We recommend that you use a "1.0" in the "Size" field, and then change it if you find that the result is not acceptable. Using a large value can cause awkward looking titles.

Keep in mind that titles and footnotes take up space that can be used for the data plot itself. Thus, if you specify three titles and two footnotes, the data plot will be smaller than if you specified one title and one footnote. Similarly, the size (specified in the "Size" field) of the title or the footnote affects the size of the display area for the plot. For this reason, you should judiciously choose the number and size of the titles and footnotes that you use.

Axis labels are specified in the same way as titles and footnotes. Generally, the color and font for the labels should be the same as for the titles, but this is completely up to you.

When you are done specifying all the necessary information, press ENTER to process your selections.

#### Error Messages

The "Title #1" field is required for all graphics. If the title line is left blank or if its "Color", "Font", or "Size" fields are left blank, the following message is displayed:

Press PF15 to continue

A VALUE IS REQUIRED AT THE CURSOR LOCATION.

The "Vertical Axis" and "Horizontal Axis" fields are required for certain types of graphs. If these fields are required and are left blank, the following message is displayed:

Press PF15 to continue

A VALUE IS REQUIRED IN THIS FIELD FOR THIS GRAPH TYPE.

If the "Vertical Axis" and "Horizontal Axis" fields are required, the corresponding "Color", "Font", and "Size" fields are also required. Leaving any of these fields blank will result in the following message:

Press PF15 to continue

A VALUE IS REQUIRED AT THE CURSOR LOCATION.

If any of the above error messages is encountered, press PF15 and enter the required data at the cursor location.

**Value Calculation Message**

|               |  |                    |
|---------------|--|--------------------|
| 2.5           | EPS 2.0: VALUE CALCULATION MESSAGE                         |                    |
|               | PRESS ENTER TO CALCULATE VALUES AND DETERMINE AXIS SCALING |                    |
|               | PROCESS COULD TAKE SEVERAL MINUTES                         |                    |
| PF1/PF13=Help | PF3/PF15=Prev Menu   | PF4/PF16=Main Menu |

|   |
|---|
| CALCULATING VALUES FOR GRAPHIC AND AXES |
|---|

The Value Calculation Message screen provides status information. The upper screen will appear after you have entered the necessary title and label information in the Graphic Title/Description Specification screen. The screen informs you that there will be a perceptible delay while the intensive calculations required to construct the graph are performed.

**Instructions**

Press **ENTER** to continue. After you press **ENTER**, the lower screen will appear and remain until the calculations are completed and the Time Series Analysis Graph Axis Scaling screen is displayed

**Error Messages**

None.

## Time Series Analysis Graph Axis Scaling Screen

2.5.1

### EPS 2.0: TIME SERIES ANALYSIS GRAPH AXIS SCALING SCREEN

|   | Calculated<br>Axis Values | Data<br>Values | Selected<br>Axis Values |
|---|---------------------------|----------------|-------------------------|
| Maximum   | 100                       | 90.2           | <u>95</u>               |
| Minimum   | 0                         | 0.2            | <u>0</u>                |
| Step  | 20                        |                | <u>5</u>                |
| PF1/PF13=Help                      PF3/PF15=Prev Menu                      PF4/PF16=Main Menu |                           |                |                         |

CALCULATING VALUES AND PLOTTING GRAPHIC AFTER SCREEN GRAPHIC  
HAS BEEN CREATED, PRESS ENTER FOR DISPOSITION OPTIONS

This screen follows the Value Calculation Message screen. It allows you to alter the scale on the vertical chart axis.

### Instructions

The "Calculated Axis Values" column and the "Data Values" column are informational. The "Calculated Axis Values" column gives you suggested values for the vertical axis based on the actual maximum and minimum data values displayed in the "Data Values" column. The actual values used in drawing the chart will be the values you enter in the "Selected Axis Values" column.

Enter your "Selected Axis Values" and press ENTER. After you press ENTER the message on the lower screen shown above will appear and remain until the calculations are completed. On some devices the "Calculating Values and Plotting Graph" message will blink.

Keep in mind that values in the "Selected Axis Values" column will be values you previously entered. If you change the plot variable, the "Selected Axis Values" column may need to be changed.

**Error Messages**

Four errors are possible from the Axis Scaling screen.

- (1) If the maximum "Selected Axis Value" is less than the maximum "Data Value", the following error message is displayed:

```
— Press PF15 to continue —  
DATA VALUES GREATER THAN MAXIMUM AXIS VALUE...REENTER.
```

- (2) If the minimum "Selected Axis Value" is greater than the minimum "Data Value", the following error message is displayed:

```
— Press PF15 to continue —  
DATA VALUES LESS THAN MINIMUM AXIS VALUE...REENTER.
```

- (3) If the difference between the maximum and minimum "Selected Axis Value" is not equally divisible by the selected axis step value, the following message is displayed:

```
— Press PF15 to continue —  
RANGE NOT EQUALLY DIVISIBLE BY STEP VALUE...REENTER
```

- (4) If you enter a small step value that creates more increments than can be displayed on the graph, the following message is displayed:

```
— Press PF15 to continue —  
STEP VALUE TOO SMALL...PLEASE REENTER
```

In each case, press PF15 and the cursor will be placed on the appropriate field. Refer to the "Data Values" column, reenter valid values, and press ENTER when done.

At this point your graphic will be displayed on the screen and, when you are through viewing it, press ENTER to continue.

## Termination Selection

|  |
|--|
| <div>2.6</div> <div>EPS 2.0: TERMINATION SELECTION</div> <div>Choose the Action you would like to take.</div> <div><ul style="list-style-type: none"><li>1) Change Device, Plot Type, or Starting/Ending Conditions</li><li>2) Change Input Data Sets</li><li>3) Change Cutoff Ranges or Titles</li><li>4) Redisplay the Graphic</li><li>5) Save the Graphic</li><li>6) Exit EPS 2.0 Graphic Module</li></ul></div> <div>Selection: <u>5</u></div> |
|--|

This screen is displayed after pressing ENTER when the graphic is on the screen. It provides you with a number of options for saving, redisplaying, modifying, or recreating graphics as well as exiting the EPS 2.0 Graphics module. Depending on your response, you will be transferred to the appropriate screen, where you can make any changes.

### Instructions

A value between "1" and "6" must be entered in the "Selection" field at the bottom of this screen. After you have selected an option, press ENTER. A description of the six possible options follows. If you would like more information regarding any screen discussed below, see the descriptions of screens presented earlier in this section.

#### *Option 1 -- Change Device, Plot Type or Starting/Ending Conditions*

Selecting this option returns you to the Graphic Selection screen, where you can change the device type or the type of graphic being generated. After making any changes and processing the selections, the Temporal Graphic Selection screen (or corresponding screen if you changed the plot type) will be displayed, allowing you to change the starting or ending conditions.

*Option 2 -- Change Input Data Sets*

When this option is selected, you will be returned to the File Extract Selection screen, where you can extract another file or read a SAS file already extracted.

*Option 3 -- Change Cutoff Ranges or Titles*

The Graphic Title /Description Specification screen is displayed when this option is chosen, and you can change the titles, footnotes, or axis labels along with their respective colors, fonts, and sizes.

*Option 4 -- Redisplay the Graphic*

Selecting this option will cause the graphic that was just viewed to be redisplayed on your terminal screen. This option is mostly for your convenience, to allow you a quick method of reviewing the last graphic created without going through all the steps to recreate it.

*Option 5 -- Save the Graphic*

The Save Graphics screen (discussed later in this section) is displayed when you choose this option. This screen allows you to specify the name of the data set that will contain the SAS Graphics Catalog as well as descriptive fields that will later aid in identifying the graphic.

*Option 6 -- Exit EPS 2.0 Graphic Module*

By selecting this option, you leave the Graphics module. All open files will be closed and you will be returned to the EPS main menu. Be sure to exercise option 5 before this option if you want to save the graphic, otherwise it will not be saved upon leaving the Graphics module.

## Error Messages

If any value other than "1" through "6" is entered in the "Selection" field, the following message will be displayed in the center of the screen:

Press PF15 to continue

YOU MUST ENTER A VALUE FROM 1-6 INCLUSIVE TO CONTINUE.

After you press PF15, the cursor will be placed on the "Selection" field to allow you to enter a value between "1" and "6".

## Save Graphic Screen

2.7

## EPS 2.0: SAVE GRAPHIC SCREEN

Please enter below the Fully Qualified Data Set Name  
of the Graphics Catalog to be created or modified.

Do not enclose the Data Set Name in Quotes

Graphics Catalog DSN: uidacct.EPS2.GCAT

Enter the NAME and Description of this graphic. This  
information will be stored in the Graphics Catalog and  
will aid in identifying the plot.

Name: LINE

Description: LIVINGSTON, LA SPECIES TOTALS

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen allows you to permanently save any or all graphics you generate in a device-independent SAS Graphics Catalog. Because this is a device-independent file, you can display these graphics later on any graphics device and change colors as you desire.

You will be asked for the name of the data set that will contain the graphics catalog as well as some descriptive information that will aid in later identification of the plot. If the data set name you supply already exists, the file will be kept and the current graphic will be added to the catalog. No default data set name is supplied, but suggested descriptive information is furnished.

**Instructions**

Enter the fully qualified name of the data set you wish to use for the SAS Graphics Catalog in the space provided. Do *not* enclose the data set name in quotes. If the data set already exists, it will be kept and the current graphic will be added to the catalog. No default is supplied for this field.

The "Name" and "Description" fields are required and are used in identifying the type of graphic in the catalog without displaying it on the terminal screen.

If meaningful values of "Name" and "Description" were supplied when the graphic was generated, you should be able to easily identify the graphic. For this reason, we recommend that you use the default values that are supplied, which are explained below.

The default term for the "Name" field is "LINE". The default terms in the "Description" field are always of the form:

study start-day analysis

where

study   = the "STUDY" variable supplied in the Input File Selection screen  
start-day = the start date for this graphic  
analysis = the selected analysis chosen for the graphic

Thus, the default description for a time series plot showing the total Livingston county emissions for species in the Baton Rouge domain on July 11, 1988 would be

BATON ROUGE 11JUL88 LIVINGSTON, LA SPECIES TOTAL

and the default name would be "LINE".

When you are done specifying all the necessary information, press **ENTER** to process your selections.

If the data set you specified already exists, it will be kept and the current graphic will be added to it. If the data set does not exist, you will be asked if you want to create it. If you do not wish to create the data set, enter "N" and press **ENTER**. If you enter "Y", you will be asked if you want to catalog or delete the data set upon deallocation. If you want the catalog and its contents to be saved for use in future SAS sessions, enter "C" and press **ENTER**.

The screen will clear and the next screen displayed will be the **PROC GREPLAY** screen. For complete information on using **PROC GREPLAY**, see Chapter 36 of the *SAS/GRAPH Software Reference, Version 6*. When you are finished using the Graphics Catalog, press **PF15** to return to the Termination Selection screen.

## **Error Messages**

None.

#### **4.2.5 SPATIAL GRAPHICS**

Spatial graphics ignore the temporal aspect of the data but provide information on geographic relationships. The EPS emission display system creates one type of spatial graphics: the shaded tile map. The map can provide an overview of the emissions of a single species or a single source type within a region.

- For a general overview of the emission pattern in an area, select the shaded tile map.

## Shaded Tile Analysis Selection

```

2.3
      EPS 2.0:  SHADED TILE ANALYSIS SELECTION

Pattern Type:  1  1) Color           2) Monochrome
Grid Annotation: 1  1) None           2) Col/Row           4) Lat/Lon
Period of Interest:  Start Day 11JUL88  Hour 1
                   End Day  11JUL88  Hour 24
Species:  NO2  (Type ? for a list of species)
Selection:  1  1) Total Emissions for All Source Types
              2) Total Emissions for One Source Type

PF1/PF13=Help      PF3/PF15=Prev Menu      PF4/PF16=Main Menu

```

This screen is displayed when you choose "3" on the Graphics Selection screen. It allows you to select the type of data you want to plot in a shaded tile map.

### Instructions

You may select either a color or monochrome plot. Entering "1" in the "Pattern Type" field will yield a color plot; a value of "2" will generate a monochromatic plot.

Next, you must decide the type of grid annotation that you want displayed on the chart. A "1" in the "Grid Annotation" field will display no annotation, a "2" will annotate rows and columns, and a "3" will display latitude/longitude annotation. This information is helpful when trying to identify the location of emissions for a single cell or group of cells.

You must then determine the "Period of Interest" for the map. This consists of starting and ending dates and times, with the values you specify corresponding to the extracted data used as input.

For example, if your data set covers the hours 1 to 24 on July 11, 1988, then you must enter "11JUL88" in the "Start Day" and "End Day" fields but may choose any range of hours between 1 and 24 for the "Start Hour" and "End Hour" fields. The only restriction is that the starting hour must be less than the ending hour.

You must select a species for either analysis. To display a list of species, type "?" in the "Species" field and press ENTER. Place your cursor on your selection and press ENTER. The list will disappear and you will be returned to the Shaded Tile Analysis Selection screen.

By filling out the "Selection" field you determine the variable that is displayed in the graphic. You can select analysis "1" to include all source types for the domain or "2" to select one source type for the domain.

When you are done specifying all the necessary information, press ENTER to process your selections.

### Error Messages

All fields on this screen are required. Leaving the "Pattern Type" field blank or entering a value other than "1" or "2" will result in the following message:

```
Press PF15 to continue
ENTER 1 OR 2 -OR- PRESS PF13 FOR HELP
```

The "Grid Annotation" field must also contain values within their respective allowable ranges or a similar error will be displayed.

As with statistical graphics and temporal graphics (Sections 4.2.3 and 4.2.4), the start date and hour must precede the end date and hour. The "Start Day" and "End Day" fields must be valid SAS dates and the "Hour" fields must be between 1 and 24. Failure to follow these rules will result in the same error messages described in Sections 4.2.3 and 4.2.4.

If you enter a species that is not contained in the input file, the following message will be displayed:

```
Press PF15 to continue
INVALID SPECIES...PLEASE REENTER.
```

For the "Selection" field, any value other than "1" or "2" will result in the following message:

```
Press PF15 to continue
VALID VALUES ARE 1 OR 2...PLEASE REENTER.
```

#### 4.2.5 SPATIAL GRAPHICS

If you extracted a UAM file and entered "2" in the "Selection" field, the following message will be displayed:

Press PF15 to continue  
ONLY VALID ANALYSIS FOR UAM FILES IS 1...PLEASE REENTER.

For all of the above error messages, press PF15 to continue and the cursor will be positioned for data entry.

## Source Type Selection List

### Source Type Selection

EPS 2.0: SOURCE TYPE SELECTION LIST

Place cursor on the source type you wish to use in the chosen analysis and press ENTER to select.

Press PF15 to process your selection.

#### Source Types

ELEVATED POINT  
LOW LEVEL POINT  
MOBILE  
**AREA**

If you selected a single source type for plotting, this screen will be the next one displayed. This screen allows you to choose the source type you wish to use in your shaded tile plot.

### Instructions

Use the up and down arrow keys to move the cursor to the source type you would like to select. Do *not* use the TAB key. Move the cursor to your choice and press ENTER. The source type you selected will be highlighted.

You can change your selection. One way to change the selection is to place the cursor on your current selection and press ENTER. This will unselect the current selection and then you can move the cursor to make a different selection. Another way is to move the cursor to the new selection and press ENTER. This will unhighlight your previous choice and highlight your new choice.

Press PF15 after you have made a selection to continue to the next screen.

### Error Messages

If you press PF15 without having made a selection, the following message will be displayed:

Press PF15 to continue

PLEASE SELECT A SOURCE TYPE

## Shaded Tile Scale Selection

2.3.1

## EPS 2.0: SHADED TILE SCALE SELECTION

Press PF20 to see the Statistical Composition of the Data.

Select the appropriate class breaks and corresponding colors or patterns. The available colors and patterns for your device are specified below.

| Class | Calculated<br>Cutoff Value | Selected<br>Cutoff Value | Selected<br>Color/Pattern |
|-------|----------------------------|--------------------------|---------------------------|
| 1     | < 82                       | < 80                     | BLUE                      |
| 2     | < 96                       | < 95                     | CYAN                      |
| 3     | < 110                      | < 110                    | GREEN                     |
| 4     | < 124                      | < 125                    | YELLOW                    |
| 5     | < 138                      | < 140                    | PINK                      |
| 6     | > , = 138                  | > , = 140                | RED                       |

Available Colors (for Color plots)

BLUE CYAN GREEN YELLOW MAGENTA RED WHITE BLACK

Available Patterns (for Monochrome Tile plots)

E M1N45 M3N45 M4N45 M5N45 S

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

## Statistical Composition of Data

## EPS 2.0: STATISTICAL COMPOSITION OF DATA

Press PF19 to return to the Pattern Selection Menu.

| Percentile | Value | Percentile | Value |
|------------|-------|------------|-------|
| 5          | 81.4  | 55         | 126.3 |
| 10         | 89.9  | 60         | 129.6 |
| 15         | 94.1  | 65         | 132.3 |
| 20         | 97.1  | 70         | 134.8 |
| 25         | 99.1  | 75         | 138.4 |
| 30         | 105.1 | 80         | 140.7 |
| 35         | 110.6 | 85         | 143.5 |
| 40         | 115.5 | 90         | 145.5 |
| 45         | 119.4 | 95         | 148.8 |
| 50         | 122.2 |            |       |

Minimum Value: 68.4 Maximum Value: 154.5

Number of Records: 667

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

The Shaded Tile Scale Selection screen allows you to select cutoff values for the class breaks and a corresponding color or monochrome pattern for the graphic.

The Statistical Composition of Data screen is really the second page of the Shaded Tile Scale Selection screen, and is accessed by pressing PF20 when the Shaded Tile Scale Selection screen is displayed. The purpose of the Statistical Composition of Data screen is to provide you the information necessary to enter the cutoff values on the Shaded Tile Scale Selection screen. Based on the analysis chosen on the Shaded Tile Selection screen, you will be presented with the values of the data to be plotted broken down into several percentiles. Thus, you can determine the approximate percent of the data that will be contained in the cutoff ranges you select.

NOTE: Neither of these screens will be displayed if you are generating a monochrome gridded value map.

### **Instructions**

The column labeled "Calculated Cutoff Value" offers a suggestion of six cutoff values derived from the data range detailed on the Statistical Composition of Data screen. You may enter these values in the "Selected Cutoff Value" fields or select your own values. The only restriction is that all six fields must have a value, and the values must be in ascending magnitude from top to bottom. Note that the logical operator preceding the "Selected Cutoff Value" field will be used to subset the data for this class.

For example, in the sample screen shown on the preceding page the following class breaks are defined.

Class 1--All data values less than 80 will be printed blue.

Class 2--All data values greater than or equal to 80 but less than 95 will be printed cyan.

Class 3--All data values greater than or equal to 95 but less than 110 will be printed green.

Class 4--All data values greater than or equal to 110 but less than 125 will be printed yellow.

Class 5--All data values greater than or equal to 125 but less than 140 will be printed pink.

Class 6--All data values greater than or equal to 140 will be printed red.

#### 4.2.5 SPATIAL GRAPHICS

You must also enter a color or monochrome fill pattern in the corresponding "Selected Color/Pattern" field. We recommend that you choose from the colors listed at the bottom of this screen, because these colors are supported by the device you specified on the Graphic Selection screen. Also, the monochrome patterns that are listed have proved to yield good results on monochrome plots, so they should be used when patterns are needed.

Note that values for "Selected Cutoff Value" and "Selected Color/Pattern" fields are retained from the previous run. If you change species or analysis types, the cutoff values may not adequately represent the range of values present. Always refer to the "Calculated Cutoff Value" column or the Statistical Composition of Data screen before selecting cutoff values.

#### Error Messages

If the Class 1 "Cutoff Value" field is left blank or if any "Color/Pattern" field is left blank, the following message is displayed:

```
Press PF15 to continue
VALUE REQUIRED AT CURSOR LOCATION.
```

Each succeeding "Cutoff Value" field must be greater than the preceding one. If this is not done or if one of the fields is left blank, a message similar to the following is displayed:

```
Press PF15 to continue
CUTOFF VALUE 3 MUST BE GREATER THAN CUTOFF VALUE 2.
```

Press PF15 and enter a correct value at the cursor location.

## Graphic Title/Description Specification

2.4

### EPS 2.0: GRAPHIC TITLE/DESCRIPTION SPECIFICATION

Enter title, footnote, and label information. Skip fields not desired. Default values can be overwritten. Do not use quotes. Size unit is cells.

| TEXT  | COLOR | FONT  | SIZE  |
|---|-------|-------|-------|
| Title #1<br>BATON ROUGE UAM NO2 EMISSIONS   | WHITE | NONE  | 1.0   |
| Title #2<br>11JUL88 OVER THE HOURS 1 AND 24 | WHITE | NONE  | 1.0   |
| Title #3<br>_____                           | _____ | _____ | _____ |
| Footnote #1<br>_____                        | _____ | _____ | _____ |
| Footnote #2<br>_____                        | _____ | _____ | _____ |
| Vertical Axis<br>_____                      | _____ | _____ | _____ |
| Horizontal Axis<br>EMISSIONS (MOLES)        | WHITE | NONE  | 1.0   |

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen appears after the Shaded Tile Scale Selection screen. In this screen you specify titles, footnotes, and axis labels along with their respective color, font, or text size. Where possible, default values based upon user inputs are provided.

### Instructions

You can specify up to three titles and two footnotes for any one graphic. Simply type the text of the title or footnote in the "Text" fields and choose a color, font, and size. You should be sure that the color you specify is supported by the device you are using. Generally, it is a good idea to use white for display on a terminal and black for printing on a hard-copy device.

Next you will want to choose a font to print the text of your title or footnote. If you enter "None", the system will use the hardware characters of the device to compose the text. This is usually a very simple font, but suitable for most applications. It is also drawn faster than any other font, so it should be used if you want to save time or preview graphics.

Finally, you will need to specify the size of the characters printed in the title or footnote. The units of size is cells. We recommend that you use "1.0" in the "Size" field first, and then change it if you do not like the result. A large size can create awkward looking titles.

Keep in mind that titles and footnotes take up space that can be used for the data plot itself. Thus, if you specify three titles and two footnotes, the data plot will be smaller than if you specified one title and one footnote. Similarly, the size (specified in the "Size" field) of the title or the footnote affects the size of the display area for the plot. For this reason, you should judiciously choose the number and size of the titles and footnotes.

The "Vertical Axis" label is not used in spatial plots. The "Horizontal Axis" label field is used for the legend and its "Color", "Font", and "Size" fields determine the color, font, and size of the text used in the legend.

When you are done specifying all the necessary information, press **ENTER** to process your selections.

### Error Messages

The "Title #1" field is required for all graphics. If the title line is left blank or if its "COLOR", "FONT", or "SIZE" fields are left blank, the following message is displayed:

```
— Press PF15 to continue —  
A VALUE IS REQUIRED AT THE CURSOR LOCATION.
```

The "Horizontal Axis" field is required for this graph type. If it is left blank, the following message is displayed:

```
— Press PF15 to continue —  
A VALUE IS REQUIRED IN THIS FIELD FOR THIS GRAPH TYPE.
```

If the "Color", "Font", and "Size" fields are left blank, the following message will occur:

Press PF15 to continue

A VALUE IS REQUIRED AT THE CURSOR LOCATION.

If any of the above error messages is encountered, press PF15 and enter the required data at the cursor location.

**Value Calculation Message**

2.5

EPS 2.0: VALUE CALCULATION MESSAGE

PRESS ENTER TO CALCULATE VALUES AND DISPLAY GRAPH

PROCESS COULD TAKE SEVERAL MINUTES.

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

CALCULATING VALUES AND PLOTTING GRAPHIC  
AFTER SCREEN GRAPHIC HAS BEEN CREATED,  
PRESS ENTER FOR DISPOSITION OPTIONS

The Value Calculation Message screen provides status information. The upper screen will appear after you have entered the necessary title and label information in the Graphic Title/Description Specification screen. The screen informs you that there will be a delay while the intensive calculations required to construct the graph are performed.

**Instructions**

Press ENTER to continue. After you press ENTER the lower screen will appear and remain until the graph is displayed. On some devices the "Calculating Values and Plotting Graph" message will blink.

**Error Messages**

None.

2.6

EPS 2.0: TERMINATION SELECTION

Choose the Action you would like to take.

- 1) Change Device, Plot Type, or Starting/Ending Conditions
- 2) Change Input Data Sets
- 3) Change Cutoff Ranges or Titles
- 4) Redisplay the Graphic
- 5) Save the Graphic
- 6) Exit EPS 2.0 Graphic Module

Selection: 5

This screen is displayed after pressing ENTER when the graphic is on the screen. It provides you with a number of options for saving, redisplaying, modifying, or recreating graphics as well as exiting the Graphics module. Depending on your response, you will be transferred to the appropriate screen, where you can make any changes.

### Instructions

A value between "1" and "6" must be entered in the "Selection" field. Press ENTER after making your selection. A description of the six possible options follows. If you would like more information regarding any screen discussed below, refer to the screen descriptions earlier in this section.

#### *Option 1 -- Change Device, Plot Type or Starting/Ending Conditions*

Selecting this option returns you to the Graphic Selection screen, where you can change the device type or the type of graphic being generated. After making any changes and processing the selections, the Spatial Graphic Selection screen (or the corresponding screen if you changed your plot type) will be displayed, allowing you to change the starting and ending conditions.

*Option 2 -- Change Input Data Sets*

When this option is selected, you will be returned to the File Extract Selection screen, where you decide to extract another file or read a SAS file already extracted.

*Option 3 -- Change Cutoff Ranges or Titles*

The Spatial Plot Pattern Selection screen is displayed when this option is chosen, which allows you to change the class breaks and colors or patterns. Recall that the "Statistical Composition of Data" screen, which gives a statistical breakdown of the data by percentile, can be accessed by pressing PF20.

*Option 4 -- Redisplay the Graphic*

Selecting this option will redisplay the graphic that was just viewed. This option is mostly for your convenience, to allow you a quick method of reviewing the last graphic without going through all the steps to recreate it.

*Option 5 -- Save the Graphic*

The Save Graphic screen (discussed later in this section) is displayed when you choose this option. This screen allows you to specify the name of the data set that will contain the SAS Graphics Catalog as well as descriptive fields that will later aid in the identification of the graphic.

*Option 6 -- Exit Graphic Module*

By selecting this option, you leave the Graphics module. All open files will be closed and you will be returned to the EPS main menu. Be sure to exercise option 5 before this option if you want to save the graphic, otherwise it will not be saved upon leaving the Graphics module.

## Error Messages

If any value other than "1" through "6" is entered in the "Selection" field, the following message will be displayed in the center of the screen:

Press PF15 to continue

YOU MUST ENTER A VALUE FROM 1-6 INCLUSIVE TO CONTINUE.

After you press PF15, the cursor will be placed on the "Selection" field to allow you to enter a value between "1" and "6".

## Save Graphic Screen

2.7

## EPS 2.0: SAVE GRAPHIC SCREEN

Please enter below the Fully Qualified Data Set Name  
of the Graphics Catalog to be created or modified.

Do not enclose the Data Set Name in Quotes

Graphics Catalog DSN: uidacct.ESP2.GCAT

Enter the NAME and Description of this graphic. This  
information will be stored in the Graphics Catalog and  
will aid in identifying the plot.

Name: CTILE

Description: NO2 ALL SOURCES TOTALS

PF1/PF13=Help

PF3/PF15=Prev Menu

PF4/PF16=Main Menu

This screen allows you to permanently save any or all graphics that you generate in a device-independent SAS graphics catalog. Because this is a device-independent file, you can display these graphics later on any graphics device and change as many colors you desire.

You will be asked for the name of the data set that will contain the graphics catalog as well as some descriptive information that will aid in later identification of the plot. If the data set name you supply already exists, the file will be kept and the current graphic will be added to the catalog. No default data set name is supplied, but suggested descriptive information is furnished.

### Instructions

Enter the fully qualified name of the data set you wish to use for the SAS graphics catalog in the space provided. Be sure not to enclose the data set name in quotes. If the data set already exists, it will be kept and the current graphic will be added to the catalog.

The "Name" and "Description" fields are required and are used to identify the type of graphic in the catalog without displaying it on the terminal screen.

If meaningful values of "Name" and "Description" were supplied when the graphic was generated, you should be able to easily identify the graphic. For this reason, we recommend that you use the default values that are supplied, which are explained below.

Default terms for the "Name" field are "CTILE" for color tile or "MTILE" for monochrome tile. The terms in the "Description" field are always of the form:

study start-day analysis  
where

study = the "STUDY" variable supplied in the Input File Selection Screen  
start-day = the start date for this graphic  
analysis = analysis selected for shaded tile graph

Thus, the default description for a color shaded tile map for the Baton Rouge domain showing the total emissions for all sources on July 11, 1988 would be:

**BATON ROUGE 11JUL88 NO2 ALL SOURCES TOTALS**

and the default name would be "CTILE".

When you are done specifying all the necessary information, press **ENTER** to process your selections.

If the data set you specified already exists, it will be kept and the current graphic will be added to it. If the data set does not exist, you will be asked if you want to create it. If you do not wish to create the data set, enter "N" and press **ENTER**. If you enter "Y", you will be asked if you want to catalog or delete the data set upon deallocation. If you want the catalog and its contents to be saved for future SAS sessions, enter "C" and press **ENTER**.

The screen will clear and the next screen displayed will be the **PROC GREPLAY** screen. For complete information on using **PROC GREPLAY**, see Chapter 36 of the *SAS/GRAPH Software Reference, Version 6*. When you are finished using the Graphics Catalog, press **PF15** to return to Termination Selection screen.

## **Error Messages**

None.

### 4.3 GRAPHICS CATALOG

Within the SAS statistical analysis and data management system, the Graphics Catalog is the data set in which the graphs are stored. The SAS Graphics Catalog is used to redisplay graphics much more rapidly than repeating the graphic generation process.

A temporary graphics catalog is always produced when SAS graphics procedures are run, but this temporary catalog and its contents are lost when terminating the EPS Graphics module. To save graphics output between SAS sessions, you must specify a permanent graphics catalog in the EPS 2.0 Interface and Emissions Display System. The "Save the Graphic" option on the Termination Selection screen of the EPS Graphics module allows you to create a permanent SAS graphics catalog and to store graphics output in it. To redisplay, merge graphics, remap colors, or otherwise manipulate the stored graphics, you must run the SAS GREPLAY procedure. GREPLAY may be run from the TSO Ready prompt by executing the SAS CLIST and subsequently submitting PROC GREPLAY to the system with the proper parameters. The EPS Graphics Catalog module allows you direct access to PROC GREPLAY from the EPS menu system.

## Graphics Catalog Management Menu

|  |                    |                    |
|--|--------------------|--------------------|
| EPS 2.0 GRAPHICS CATALOG MANAGEMENT  |                    |                    |
| Please enter below the Fully Qualified Data Set Name<br>of the Graphics Catalog to be created or modified. |                    |                    |
| Do not enclose the Data Set Name in Quotes.  |                    |                    |
| Graphics Catalog DSN: <u>uidacct.EPS2.GCAT</u>   |                    |                    |
| Graphics Device : <u>IBM3179</u>   |                    |                    |
| PF1/PF13=Help  | PF3/PF15=Prev Menu | PF4/PF16=Main Menu |

This screen is presented when you choose the "Graphics Catalog" block on the main menu. This screen is intended to be a quick way for you to access the SAS procedure GREPLAY from within the EPS 2.0 interface. You may create a graphics catalog from this screen or access any existing one.

**Instructions**

Enter the fully qualified data set name for the Graphics Catalog (do not confuse this data set name with the extracted data sets) and your graphics device. Press ENTER. The screen will clear and the next screen displayed will be the PROC GREPLAY screen.

When you have finished using PROC GREPLAY, press PF15 to return to the main menu.

**Error Messages**

None.

## Sample PROC GREPLAY Display

|              |            |           |  |
|--------------|------------|-----------|--|
| PROC GREPLAY |            |           |  |
| Command ==>  |            |           |  |
| IGOUT:       | GOUT.PLOTS | GOUT:     | _____  |
| TC:          | _____      | Template: | _____  |
| CC:          | _____      | Cmap:     | _____  |
|              |            |           | Device: IBM3179                              |
|              |            |           | Scroll: PAGE                                 |
|              |            |           |  |
| Sel          | Name       | Type      | Description                                  |
|              | BAR        | I         | BATON ROUGE 11JUL88 DOMAIN TOTAL FOR SPEC    |
|              | LINE       | I         | BATON ROUGE 11JUL88 COUNTY TOTAL FOR SPEC    |
|              | CTILE      | I         | BATON ROUGE 11JUL88 DOMAIN TOTAL ALL SOURCES |
|              |            |           | Updated                                      |
|              |            |           | 09/30/91                                     |
|              |            |           | 09/30/91                                     |
|              |            |           | 09/30/91                                     |

| Field      | Description   |
|------------|---|
| "IGOUT"    | The name of the input catalog (the catalog currently displayed).  |
| "GOUT"     | The name of the output catalog (the catalog to which the graphic will be replayed or copied).                             |
| "Device"   | The graphics device on which the graphic will be displayed (generally the current graphics device).                       |
| "TC"       | The template catalog containing the template to be used when displaying the graphic (leave blank if no template is used). |
| "Template" | The name of the template to be used to display the graphic (leave blank if no template is used).                          |
| "Scroll"   | The current scroll value for an entry list greater than one screen in length.   |
| "CC"       | The color map catalog from which the color map is drawn (leave blank if no color map is used).                            |
| "Cmap"     | The name of the color map used to display the graphic (leave blank if no color map is used).                              |
| "Sel"      | The selection field; used to enter commands that apply to the corresponding catalog entry.                                |

|               |  |
|---------------|--|
| "Name"        | The name that was assigned to the graphic by the "Name" field on the "Save Graphic" screen.                        |
| "Type"        | The type of graphics output. See Chapter 3 of <i>SAS/GRAPH Software Reference, Version 6</i> for more information. |
| "Description" | The description that was assigned to the graphic by the "Description" field on the Save Graphic screen.            |
| "Updated"     | The date that the catalog entry was generated.   |

For additional information about these fields and the use of PROC GREPLAY in general, refer to *SAS/GRAPH Software Reference, Version 6*.

### Instructions

#### *Display graphics*

Type "S" in one or more "Sel" fields and press ENTER.

#### *Delete a graphic*

Type "DEL" in the "Sel" field and press ENTER.

#### *Copy a graphic*

Type "C" in the "Sel" field and press ENTER. The graphic entry will be copied to the catalog specified in the "GOUT" field.

#### *Display graphics in a template*

Enter a template catalog name in the "TC" field and the name of the template in the "Template" field. Next, select the graphic (or graphics) from the catalog list by typing "S" and a number in the "Sel" field(s) to indicate the order in which the graphics are to be displayed in the template. Press ENTER.

#### *Change the colors in a graphic*

Enter a color map catalog name in the "CC" field and the name of the color map in the "Cmap" field. Next, select the graphic from the catalog list by typing "S" in the "Sel" field. Press ENTER.

#### *Create or edit a template*

Enter a template catalog name in the "TC" field. On the command line type "edit *templatename*.TEMPLATE", then press ENTER. The SAS TEMPLATE DESIGN window will be displayed for editing of the template.

*Create or edit a color map*

Enter a color map catalog name in the "CC" field. On the command line type "edit *colormapname*.CMAP", then press ENTER. The SAS COLOR MAPPING window will be displayed for editing of the color map.

*Change the current catalog*

Enter the new catalog name in the "IGOUT" field and press ENTER. The new catalog list will be displayed.

## 5 SYSTEM INPUT

Three emission input files can be processed by the EPS Extract module:

- (1) EPS 2.0 Emission Binary Records (EMBR)
- (2) The file input to the UAM preprocessor PTRCE, containing elevated point source emissions data
- (3) The UAM input file 'EMISSIONS', containing low-level emissions data

The EMBR files are the internal files for the core EPS 2.0 system. EMBR files are divided into three sections: header, data, and trailer. The header section indicates the type of data in the file, the modeling region definition, the Carbon Bond Mechanism species being employed, and a history of processing of the file. The data section contains the emissions data and other emission source information necessary for processing. The trailer section indicates the number of data records in the EMBR file as well as tracking information for each EPS 2.0 processing step. See Part A of this guide (Section 2.6) for a more detailed discussion of EMBR files.

The elevated point source file consists of the UAM input packets required by the UAM preprocessor PTRCE. These packets include time-invariant and time-varying data. The time-invariant data include modeling domain and episode definition, selected Carbon-Bond Mechanism species, and stack parameters and location coordinates. The time-variant data includes emissions for each time interval each stack is in operation.

The UAM file 'EMISSIONS' is divided into two types of records: header records and time-varying records.

There are four header records. These records contain information on the domain, species, time frame, and control strategy for the data contained in the file. The first header record describes the chemical and temporal nature of the file. The second record describes the spatial characteristics of the domain. The third record describes the layout of the concentration data records in records that follow. The last header record contains the names of the species in the UAM file.

The time-varying records consist of three types of data records. The first record provides temporal information for the next two data record types. The next record indicates which segment the data represent; current UAM implementations support only one segment. The third record contains a grid of concentration values for each species.

The formats for these files are described in detail in Appendix A to this guide.



## 6 SYSTEM OUTPUT

### 6.1 FORMAT

#### USERIN and Control Factor Files

The EPS 2.0 Setup module creates two output files: (1) the USERIN file for input to core EPS modules and (2) the control factors file for input to the core module CNTLEM. The formats for the packets contained in each of these files are described in Appendix B of part A of this user's manual.

#### Extracted Emissions Data

The emissions data extracted by the EPS 2.0 Graphics module are saved as SAS-formatted files and may take one of three forms depending on the type of data extracted (see the File Selection screen). The formats for each type of file are described in Appendix B of this volume.

Note that these SAS-formatted data sets consist of many members. If you are familiar with SAS system software, these SAS data sets can be exported and used to generate other types of graphics, reports, or statistical analyses.

### 6.2 SAS GRAPHICS CATALOG

The graphics images that you generate with the EPS 2.0 interface can be saved to a SAS Graphics Catalog for later use. The procedures for generating and saving graphics are described in Sections 4.2.1 (Statistical Graphics), 4.2.2 (Temporal Graphics), and 4.2.3 (Spatial Graphics).

Once a graphic is saved in the catalog it can be displayed on any of the SAS-supported devices using the SAS procedure GREPLAY, regardless of the device on which it was generated. For example, if you created a graphic using an IBM 3179G terminal and saved it to a graphics catalog, you can use PROC GREPLAY to display this graphic on a Tektronix 4211 terminal or any other device supported by SAS. A discussion of hardware devices supported by SAS can be found in Chapter 4 of the *SAS/GRAPH User's Guide, Version 6*.

You can use a color map to change any or all colors of a graphic when replaying it from a graphics catalog. For example, if all of the titles of a particular graphic were white when you saved the graphic, you may use a color map to change these to red. Note that *anything* printed in white will be printed in red. Explanations and examples of color mapping with PROC GREPLAY can be found in Chapter 36 of the *SAS/GRAPH User's Guide, Version 6*.

For further information about graphics catalogs and displaying graphics, consult Chapters 3 and 36 of the *SAS/GRAPH User's Guide*.



## Appendix A

### **FORMATS FOR EPS INTERFACE AND EMISSION DISPLAY SYSTEM INPUT FILES**

Table A-1.    **EMBR (EMissions Binary Record)**

Table A-2.    **UAM Input File PTSOURCE**

Table A-3.    **UAM Input File EMISSIONS**



TABLE A-1. Emissions model binary record (EMBR) file contents. (Note: data record length is 411 bytes.)

| Record | Variable   | Type/<br>Size | Description                                       |
|--------|------------|---------------|---|
| 1      | FILTYP     | A30           | File type:<br>POINT<br>AREA<br>MOBILE<br>COMBINED |
|        |            | A381          | Not used  |
| 2      | STRING     | A411          | Input string internally formatted:                |
|        |            | RGUTME        | F10.4 Region origin, UTM Easting (km)             |
|        |            | RGUTMN        | F10.4 Region origin, UTM Northing (km)            |
|        |            | IRGZN         | I10 Region UTM zone                               |
|        |            | NX            | I10 Number of grid cells in east-west direction   |
|        |            | NY            | I10 Number of grid cells in north-south direction |
|        |            | DXRGN         | F10.4 Grid cell size (km)                         |
|        |            | DYRGN         | F10.4 Grid cell size (km)                         |
| 3      | SPCLST(1)  | A10           | Species name                                      |
|        | MOLWT(1)   | R*4           | Molecular weight of species                       |
|        | SPCRIT(1)  | A5            | Pollutant generating the species                  |
|        | •          | •             | •   |
|        | •          | •             | •   |
|        | •          | •             | •   |
|        | SPCLST(15) | A10           | Species name                                      |
|        | MOLWT(15)  | R*4           | Molecular weight of species                       |
|        | SPCRIT(15) | A5            | Pollutant generating the species                  |
| 4      | SPCLST(16) | A10           | Species name                                      |
|        | MOLWT(16)  | R*4           | Molecular weight of species                       |
|        | SPCRIT(16) | A5            | Pollutant generating the species                  |
|        | •          | •             | •   |
|        | •          | •             | •   |
|        | •          | •             | •   |
|        | SPCLST(30) | A10           | Species name                                      |
|        | MOLWT(30)  | R*4           | Molecular weight of species                       |
|        | SPCRIT(30) | A5            | Pollutant generating the species                  |
| 5+     | PRGNM      | A30           | Program name and version number                   |
|        | EXDAT      | A10           | Date program executed                             |
|        | EXTIM      | A10           | Time program executed                             |

Continued

TABLE A-1. Continued.

| Record   | Variable  | Type/<br>Size | Description  |
|--|-----------|---------------|--|
| 6  | KEYWRD    | A10           | Keyword indicator - /DATA/   |
| 7+   | FIP       | A5            | FIPS state/county code   |
|  | SBRGN     | A5            | Subregion code   |
|  | SICCD     | A4            | Standard Industrial Classification Code  |
|  | SCCCD     | A10           | Source Category Code (SCC) or Area Source Code (ASC)   |
|  | RECTYP    | A1            | Record type:<br>'E' = elevated point<br>'L' = low level point<br>'M' = mobile source<br>Blank = stationary area source |
|  | EMSTYP    | A2            | Type of inventory  |
|  | INVBEG    | I*4           | Beginning Julian date/time (YYDDDHH)   |
|  | INVEND    | I*4           | End Julian date/time (YYDDDHH)   |
|  | IJCELL    | I*4           | Cell location of gridded inventory   |
|  | PLANT     | A5            | NEDS plant identification code   |
|  | FACNOX    | R*4           | NO <sub>x</sub> emissions for entire facility  |
|  | FACVOC    | R*4           | VOC emissions for entire facility  |
|  | ISTACK    | I*4           | Stack Number   |
|  | POINT     | A3            | Point identification   |
|  | ISEGNO    | I*4           | Segment Number   |
|  | UTME      | R*4           | UTM Easting coordinate (km) to define location of plant  |
|  | UTMN      | R*4           | UTM Northing coordinate (km) to define location of plant   |
|  | IUTMZN    | I*4           | UTM zone   |
|  | STKGEV    | R*4           | Stack exit gas velocity (m/s)  |
|  | STKDIA    | R*4           | Stack diameter (m)   |
|  | STKTMP    | R*4           | Stack exit gas temperature (K)   |
|  | STKHGT    | R*4           | Stack height (m)   |
| For NO <sub>x</sub> , VOC, CO, SO <sub>x</sub> , TSP, PM-0, and four undefined species the following appear: |           |               |  |
|  | EMIN(1)   | R*4           | Emissions (tons)   |
|  | ICEQCD(1) | I*4           | Primary control equipment code   |
|  | CEQEFF(1) | R*4           | Control equipment efficiency (percent)   |
|  | RULEFF(1) | R*4           | Rule effectiveness (percent)   |

Continued

TABLE A-1. Concluded.

| Record   | Variable     | Type/<br>Size | Description  |
|--|--------------|---------------|--|
|  | RULPEN(1)    | R*4           | Rule penetration (percent)                         |
|  | •            | •             | •  |
|  | •            | •             | •  |
|  | •            | •             | •  |
|  | EMIN(10)     | R*4           | Emissions (tons)                                   |
|  | ICEQCD(10)   | I*4           | Primary control equipment code                     |
|  | CEQEFF(10)   | R*4           | Control equipment efficiency (percent)             |
|  | RULEFF(10)   | R*4           | Rule effectiveness (percent)                       |
|  | RULPEN(10)   | R*4           | Rule penetration (percent)                         |
|  | SPCPOL(1)... | R*4           | Emissions (moles) for speciated pollutants         |
|  | SPCPOL(30)   |               | (a maximum of 30 pollutants)                       |
| 7  | KEYWRD       | A10           | Keyword indicator - /TRAILER/                      |
| 8  | INRECS       | I*4           | Number of DATA records in this EMBR file           |
| The following records comprise the trailer and are created by EPS modules each time the EMBR file is used: |              |               |  |
| 9+   | PNAME        | A30           | Program name                                       |
|  | NFIN         | I*4           | Number of input files for program PNAME            |
|  | NFOUT        | I*4           | Number of output files for program PNAME           |
| 10+  | FILIN        | A80           | Input file name                                    |
| 11+  | FILOUT       | A80           | Output file name                                   |
| 12   | TOTIN        | R*4           | Input totals to PNAME of 10 criteria pollutants    |
| 13   | TOTOUT       | R*4           | Output totals from PNAME of 10 criteria pollutants |

TABLE A-2. Header record format for the UAM 'PTSOURCE' file.

| Word  | Type | Description  |
|---|------|--|
| <b>Header 1 - File Description</b>  |      |  |
| 1-10  | A    | File name = 'PTSOURCE', 10 characters, one character per word. |
| 11-70   | A    | File identifier, 60 characters, one character per word.        |
| 71  | I    | Number of segments (for unsegmented files, this number = 1).   |
| 72  | I    | Number of chemical species                                     |
| Words 73-76 describe the total time span contained on the file.                                     |      |  |
| 73  | I    | Beginning date of the file (Julian)                            |
| 74  | R    | Beginning time of the file (hours)                             |
| 75  | I    | Ending date of the file (Julian)                               |
| 76  | R    | Ending time of the file (hours)                                |
| <b>Header 2 - Region Description Header</b>   |      |  |
| The first three words define the reference origin:  |      |  |
| 1   | R    | x-coordinate (UTM units)                                       |
| 2   | R    | y-coordinate (UTM units)                                       |
| 3   | I    | UTM zone   |
| The next two words define the location of the modeling region with respect to the reference origin: |      |  |
| 4   | R    | x-location (meters)  |
| 5   | R    | y-location (meters)  |
| The next two words define the size of each grid cell in the x- and y-directions, respectively:      |      |  |
| 6   | R    | Grid cell size--x-direction (meters)                           |
| 7   | R    | Grid cell size--y-direction (meters)                           |
| The next three words define the size of the modeling region in grid cells:                          |      |  |
| 8   | I    | Number of grid cells--x-direction                              |
| 9   | I    | Number of grid cells--y-direction                              |
| 10  | I    | Number of grid cells--z-direction                              |

Continued

TABLE A-2. Continued.

| Word  | Type | Description   |
|---|------|---|
| The last five words describe the vertical distribution of grid cells:   |      |   |
| 11  | I    | Number of cells between surface layer and diffusion break                           |
| 12  | I    | Number of cells between diffusion break and top of region                           |
| 13  | R    | Height of surface layer (meters)  |
| 14  | R    | Minimum height of cells between surface layer and diffusion break (meters)          |
| 15  | R    | Minimum height of cells between diffusion break and top of region (meters)          |
| <b>Header 3 - File Segment Description Header</b>   |      |   |
| 1   | I    | x-location of segment origin with respect to origin of modeling region (grid units) |
| 2   | I    | y-location of segment origin with respect to origin of modeling region (grid units) |
| 3   | I    | Number of grid cells in segment--x-direction  |
| 4   | I    | Number of grid cells in segment--y-direction  |
| <b>Header 4 - Species Description Header</b>  |      |   |
| 1-10  | A    | Species name, 10 characters, one character per word.                                |
| <b>Time-Invariant Data</b>  |      |   |
| The PTSOURCE file contains the location and other fixed properties of each point source. For each segment there are two records.  |      |   |
| The Counter Record contains two words:  |      |   |
| 1   | I    | Segment number  |
| 2   | I    | Number of point sources in segment  |
| The Point Source Definition Record contains the following group of six words for each point source in the segment. If there are no point sources in the segment, this record does not appear: |      |   |
| 1   | R    | x-coordinate of point source with respect to reference origin (meters)              |
| 2   | R    | y-coordinate of point source with respect to reference origin (meters)              |
| 3   | I    | x-index of grid cell within the segment   |
| 4   | I    | y-index of grid cell within the segment   |

Continued

TABLE A-2. Concluded.

| Word | Type | Description             |
|------|------|-------------------------|
| 5    | R    | Stack height (meters)   |
| 6    | R    | Stack diameter (meters) |

### Time-Varying Data

The PTSOURCE File contains one set of the following records for each time interval.

The Time Interval Record contains four words:

|   |   |                         |
|---|---|-------------------------|
| 1 | I | Beginning date (Julian) |
| 2 | R | Beginning time (hours)  |
| 3 | I | Ending date (Julian)    |
| 4 | R | Ending time (hours)     |

For each segment there is a Counter Record, a Point Source Location Record, and one Point Source emissions Record for each species. The Counter Record contains two words:

|   |   |  |
|---|---|--|
| 1 | I | Segment number   |
| 2 | I | Number of point sources in segment for this time interval. If the number of point sources defined in the corresponding time-invariant Counter Record is greater than zero, this number must also be greater than zero. |

The Point Source Location Record contains the following group of five words for each point source in the segment (if there are no point sources in the segment, this record does not appear):

|   |   |   |
|---|---|---|
| 1 | I | x-index within segment of cell to receive emissions |
| 2 | I | y-index within segment of cell to receive emissions |
| 3 | I | z-index of cell to receive emissions                |
| 4 | R | Flow rate (m <sup>3</sup> /h)                       |
| 5 | R | Effective plume height (meters)                     |

The Point Source Emissions Record contains the following group of words:

|      |   |   |
|------|---|---|
| 1    | I | Segment number  |
| 2-11 | A | Species name, 10 characters, one character per word             |
| 12+  | R | Emissions (g-mol/h, or g/h for AEROSOLS) from each point source |

TABLE A-3. Format for the UAM 'EMISSIONS' file.

| Word  | Type | Description   |
|---|------|---|
| <b>Header 1 - File Description</b>  |      |   |
| 1-10  | A    | File name = 'EMISSIONS', 10 characters, one character per word    |
| 11-70   | A    | File identifier, 60 characters, one character per word            |
| 71  | I    | Number of file segments (for unsegmented files, this number = 1). |
| 72  | I    | Number of chemical species  |
| Words 73-76 describe the total time span contained on the file:                                     |      |   |
| 73  | I    | Beginning date of the file (Julian)                               |
| 74  | R    | Beginning time of the file (hour)                                 |
| 75  | I    | Ending date of the file (Julian)                                  |
| 76  | R    | Ending time of the file (hour)                                    |
| <b>Header 2 - Region Description Header</b>   |      |   |
| The first three words define the reference origin:  |      |   |
| 1   | R    | X-coordinate (UTM units)  |
| 2   | R    | Y-coordinate (UTM units)  |
| 3   | I    | UTM zone  |
| The next two words define the location of the modeling region with respect to the reference origin: |      |   |
| 4   | R    | X-location (meters)   |
| 5   | R    | Y-location (meters)   |
| The next two words define the size of each grid cell in the x- and y- directions, respectively:     |      |   |
| 6   | R    | Grid cell size, x-direction (meters)                              |
| 7   | R    | Grid cell size, y-direction (meters)                              |

Continued

TABLE A-3. Continued.

| Word  | Type | Description   |
|---|------|---|
| The next three words define the size of the modeling region in grid cells:  |      |   |
| 8   | I    | Number of grid cells, x-direction   |
| 9   | I    | Number of grid cells, y-direction   |
| 10  | I    | Number of grid cells, z-direction   |
| The last five words describe the vertical distribution of grid cells (for the EMISSIONS file, which does not vary vertically, these words are ignored but their presence in the file is necessary): |      |   |
| 11  | I    | Number of cells between surface layer and diffusion break (mixing height)           |
| 12  | I    | Number of cells between diffusion break (mixing height) and top of region           |
| 13  | R    | Height of surface layer (meters)  |
| 14  | R    | Minimum height of cells between surface layer and diffusion break (meters)          |
| 15  | R    | Minimum height of cells between diffusion break and top of region (meters)          |
| <b>Header 3 - File Segment Description Header</b>   |      |   |
| 1   | I    | X-location of segment origin with respect to origin of modeling region (grid units) |
| 2   | I    | Y-location of segment origin with respect to origin of modeling region (grid units) |
| 3   | I    | Number of grid cells in segment, x-direction  |
| 4   | I    | Number of grid cells in segment, y-direction  |
| <b>Header 4 - Species Description Header</b>  |      |   |
| 1-10  | A    | Species name, 10 characters, one character per word                                 |

Continued

TABLE A-3. Concluded.

| Word                        | Type | Description   |
|-----------------------------|------|---|
| <b>Time Interval Record</b> |      |   |
| 1                           | I    | Beginning date (Julian)                               |
| 2                           | R    | Beginning time (hour)                                 |
| 3                           | I    | Ending date (Julian)                                  |
| 4                           | R    | Ending time (hour)                                    |
| <b>Emissions Records</b>    |      |   |
| 1                           | I    | Segment number  |
| 2-11                        | A    | Species name, 10 characters, one character per word   |
| 12+                         | R    | Ground-level emissions (g mol/h, or g/h for AEROSOLS) |

## **Appendix B**

### **FORMATS FOR SAS DATA SETS EXTRACTED BY THE EPS GRAPHICS MODULE**

Table B-1. Fields in header member of SAS-format files with UAM area emissions data.

Table B-2. Fields in data member of SAS-format files with UAM area emissions data.

Table B-3. Fields in header member of SAS-format files with UAM point source data.

Table B-4. Fields in data member of SAS-format files with UAM point source data.

Table B-5. Fields in header member of SAS-format files with emissions model binary record (EMBR) data.

Table B-6. Fields in data member of SAS-format files with emissions model binary record (EMBR) data.



TABLE B-1. Fields in header member of SAS-format files with UAM area emissions data.

| Variable | Type      | Length | Description                            |
|----------|-----------|--------|--|
| DELTA_X  | Numeric   | 8      | Grid interval in x-direction (meters)  |
| DELTA_Y  | Numeric   | 8      | Grid interval in y-direction (meters)  |
| E_DAY    | Numeric   | 8      | Ending day of file (Julian day)        |
| E_TIME   | Numeric   | 8      | Ending time of file (hour)             |
| EN_DATE  | Character | 7      | Ending date of data record (DDMMYY)    |
| FILEID   | Character | 60     | File identifier comment                |
| FILENAME | Character | 10     | File name, e.g., "EMISSIONS"           |
| FRSTHR   | Numeric   | 8      | Beginning hour of file                 |
| LASTHR   | Numeric   | 8      | Ending hour of file                    |
| MINHT_L  | Numeric   | 8      | Minimum height to lower level (meters) |
| MINHT_U  | Numeric   | 8      | Minimum height to upper level (meters) |
| NHOURS   | Numeric   | 8      | Time interval covered by file (hours)  |
| NUM_COL  | Numeric   | 8      | Number of columns                      |
| NUM_EXT  | Numeric   | 8      | Number of species extracted            |
| NUM_HRS  | Numeric   | 8      | Time interval covered by file (hours)  |
| NUM_LEV  | Numeric   | 8      | Number of vertical levels              |
| NUM_ROW  | Numeric   | 8      | Number of rows                         |
| NUM_SEG  | Numeric   | 8      | Number of segments                     |
| NUM_SPEC | Numeric   | 8      | Number of available species            |
| NUMLEV_L | Numeric   | 8      | Number of levels in lower layer        |
| NUMLEV_U | Numeric   | 8      | Number of levels in upper layer        |
| NUMVAL_X | Numeric   | 8      | Number of values in x-direction        |
| NUMVAL_Y | Numeric   | 8      | Number of values in y-direction        |
| S_DAY    | Numeric   | 8      | Starting day of file (Julian day)      |
| S_TIME   | Numeric   | 8      | Starting time of file, hour            |
| ST_DATE  | Character | 7      | Starting date of data record (DDMMYY)  |

Continued

TABLE B-1. Concluded.

| Variable | Type      | Length | Description   |
|----------|-----------|--------|---|
| STUDY    | Character | 11     | Name of study, e.g., "BATON ROUGE"  |
| SURF_HT  | Numeric   | 8      | Height to base of surface level (meters)  |
| UTM_ZONE | Numeric   | 8      | UTM zone  |
| X_ORG    | Numeric   | 8      | x-coordinate of grid origin, UTM Easting (meters)   |
| Y_ORG    | Numeric   | 8      | y-coordinate of grid origin, UTM Northing (meters)  |
| XREF     | Numeric   | 8      | x-coordinate of reference origin (meters)   |
| YREF     | Numeric   | 8      | y-coordinate of reference origin (meters)   |
| SPEC(24) | Character | 40     | Available species in the base UAM Emissions file. These values may be referenced as separate fields (SPEC1,...,SPEC24) or as an array (SPEC{1},...,SPEC{24}). |

TABLE B-2. Fields in data member of SAS-format files with UAM area emissions data.

| Variable | Type      | Length | Description  |
|----------|-----------|--------|--|
| SPECIES  | Character | 4      | Abbreviation of species name, e.g., "NO" for nitric oxide  |
| SP       | Numeric   | 8      | Ordinal Number of SPECIES, e.g., "1" for nitric oxide  |
| CONCDATE | Character | 7      | Date of the data in this record, in SAS format   |
| COL      | Numeric   | 4      | Column number of the model grid cell to which data in this record pertain  |
| ROW      | Numeric   | 4      | Row number of the model grid cell to which data in this record pertain   |
| CONC(24) | Numeric   | 8*24   | Emissions value of this record corresponding to SPECIES, COL, ROW, and CONCDATE. These values may be referenced as separate fields (CONC1,...,CONC24) or as an array (CONC{1},...,CONC{24}). |

TABLE B-3. Fields in header member of SAS-format files with UAM point source data.

| Variable | Type      | Length | Description                            |
|----------|-----------|--------|--|
| DELTA_X  | Numeric   | 8      | Grid interval in x-direction (meters)  |
| DELTA_Y  | Numeric   | 8      | Grid interval in y-direction (meters)  |
| E_DAY    | Numeric   | 8      | Ending day of file (Julian day)        |
| E_TIME   | Numeric   | 8      | Ending time of file (hour)             |
| EN_DATE  | Character | 7      | Ending date of data record (DDMMYY)    |
| FILEID   | Character | 60     | File identifier comment                |
| FILENAME | Character | 10     | File name, e.g., "PTSOURCE"            |
| FRSTHR   | Numeric   | 8      | Beginning hour of file                 |
| LASTHR   | Numeric   | 8      | Ending hour of file                    |
| MINHT_L  | Numeric   | 8      | Minimum height to lower level (meters) |
| MINHT_U  | Numeric   | 8      | Minimum height to upper level (meters) |
| NHOURS   | Numeric   | 8      | Time interval covered by file (hours)  |
| NUM_COL  | Numeric   | 8      | Number of columns                      |
| NUM_EXT  | Numeric   | 8      | Number of species extracted            |
| NUM_HRS  | Numeric   | 8      | Time interval covered by file (hours)  |
| NUM_LEV  | Numeric   | 8      | Number of vertical levels              |
| NUM_ROW  | Numeric   | 8      | Number of rows                         |
| NUM_SEG  | Numeric   | 8      | Number of segments                     |
| NUM_SPEC | Numeric   | 8      | Number of available species            |
| NUMLEV_L | Numeric   | 8      | Number of levels in lower layer        |
| NUMLEV_U | Numeric   | 8      | Number of levels in upper layer        |
| NUMVAL_X | Numeric   | 8      | Number of values in x-direction        |
| NUMVAL_Y | Numeric   | 8      | Number of values in y-direction        |
| S_DAY    | Numeric   | 8      | Starting day of file (Julian day)      |
| S_TIME   | Numeric   | 8      | Starting time of file (hour)           |
| ST_DATE  | Character | 7      | Starting date of data record (DDMMYY)  |

Continued

TABLE B-3. Concluded.

| Variable | Type      | Length | Description   |
|----------|-----------|--------|---|
| STUDY    | Character | 11     | Name of study, e.g., "BATON ROUGE"  |
| SURF_HT  | Numeric   | 8      | Height to base of surface level (meters)  |
| UTM_ZONE | Numeric   | 8      | UTM zone  |
| X_ORG    | Numeric   | 8      | x-coordinate of grid origin, UTM Easting (meters)   |
| Y_ORG    | Numeric   | 8      | y-coordinate of grid origin, UTM Northing (meters)  |
| XREF     | Numeric   | 8      | x-coordinate of reference origin (meters)   |
| YREF     | Numeric   | 8      | y-coordinate of reference origin (meters)   |
| SPEC(24) | Character | 40     | Available species in the base UAM point source file. These values may be referenced as separate fields (SPEC1,...,SPEC24) or as an array (SPEC{1},..., SPEC{24}). |

TABLE B-4. Fields in data member of SAS-format files with UAM point source data.

| Variable | Type      | Length | Description  |
|----------|-----------|--------|--|
| SPECIES  | Character | 4      | Abbreviation of species name, e.g., "NO" for nitric oxide  |
| SP       | Numeric   | 8      | Ordinal number of SPECIES, e.g., "1" for nitric oxide  |
| CONCDATE | Character | 7      | Date of the data in this record, in SAS format   |
| NUM_PT   | Numeric   | 8      | Number of point sources in file  |
| POINT    | Numeric   | 8      | Number of point source of data record  |
| CONC(24) | Numeric   | 8*24   | Emissions value of this record corresponding to SPECIES, POINT, and CONCDATE. These values may be referenced as separate fields (CONC1,...,CONC24) or as an array (CONC{1},..., CONC{24}). |

TABLE B-5. Fields in header member of SAS-format files with emissions binary record (EMBR) data.

| Variable | Type      | Length | Description  |
|----------|-----------|--------|--|
| DELTA_X  | Numeric   | 4      | Grid interval in x-direction (meters)  |
| DELTA_Y  | Numeric   | 4      | Grid interval in y-direction (meters)  |
| FILENAME | Character | 10     | File name, e.g., "POINT"   |
| NUM_COL  | Numeric   | 3      | Number of columns  |
| NUM_EXT  | Numeric   | 8      | Number of species/pollutants extracted   |
| NUM_ROW  | Numeric   | 3      | Number of rows   |
| STUDY    | Character | 11     | Name of study, e.g., "ATLANTA"   |
| UTM_ZONE | Numeric   | 8      | UTM zone   |
| X_ORG    | Numeric   | 7      | x-coordinate of grid origin, UTM Easting (meters)  |
| Y_ORG    | Numeric   | 7      | y-coordinate of grid origin, UTM Northing (meters)   |
| VERSION  | Character | 30     | Program name and version number  |
| SPEC(36) | Character | 8*36   | Available species and pollutants in EMBR files. These values may be references as separate fields (SPEC1,...,SPEC36) or as an array (SPEC{1},..., SPEC{36}). |

TABLE B-6. Fields in data member of SAS-format files with emissions binary record (EMBR) data.

| Variable | Type      | Length | Description  |
|----------|-----------|--------|--|
| CONCDATE | Character | 7      | Date of the data record, in SAS format   |
| COUNTY   | Numeric   | 3      | County FIP code for data record  |
| E_TIME   | Numeric   | 8      | Ending time of data record (hour)  |
| ECONC    | Numeric   | 8      | Emissions of data record   |
| EN_DATE  | Character | 7      | Ending date of data record, in SAS format  |
| HOUR     | Numeric   | 8      | Hour of data record  |
| IJCELL   | Numeric   | 8      | Cell location of gridded file, '-9' if not gridded   |
| NHOURS   | Numeric   | 8      | Time interval covered by file (hours)  |
| RECTYP   | Character | 1      | Record type, e.g., "E" is elevated point   |
| S_TIME   | Numeric   | 8      | Beginning time of file (hour)  |
| SPATALLC | Character | 3      | Identifier if file is spatially allocated, e.g., "YES" if it is spatially allocated or "NO" if it is not   |
| SPECIES  | Character | 10     | Abbreviation of species/pollutants name, e.g., "NO" for nitric oxide                                       |
| ST_DATE  | Character | 7      | Beginning date of file, in SAS format  |
| STATE    | Numeric   | 2      | State FIP code for data record   |
| TEMPALLC | Character | 3      | Identifier if file is temporally allocated, e.g., "YES" if it is temporally allocated or "NO" if it is not |

| TECHNICAL REPORT DATA<br>(Please read Instructions on the reverse before completing)  |                                       |                              |
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| 15. SUPPLEMENTARY NOTES   |                                       |                              |
| 16. ABSTRACT<br><br>This document serves as a manual for the Emissions Preprocessor System (EPS 2.0) Interface and Emission Display System. The Interface and Emission Display System comprises two independent programs that allow EPS 2.0 users to (1) create or modify many of the input files necessary to run the EPS 2.0 core modules and (2) produce statistical tables and graphics of emissions data for analysis. The Interface is a user-friendly menu system written in SAS language. |                                       |                              |
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