

USER'S MANUAL

GCOST: A GAS COST-OF-SERVICE PROGRAM

VERSION 1.0

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## FOREWORD

Cost-of-service studies continue to be an important part of the ratemaking process. There is a growing need among regulatory analysts for a computerized tool to perform cost-of-service studies for gas distribution utilities. This document and the accompanying software have been developed to fulfill this need.

We hope our clientele in state commissions will find it useful. I commend it to your attention and use.

Douglas N. Jones  
Director  
May 1989  
Columbus, Ohio



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## CHAPTER 1

### INTRODUCTION

The process of rate design for a gas distribution utility requires the use of cost-of-service studies. A cost-of-service study finds the various costs of serving all of a utility's customers, and allocates these costs to individual customer classes. The costs include investments in plant and equipment, operating expenses, and taxes. There are two distinct approaches that underlie cost-of-service studies. One approach is based on marginal costs and the other on embedded costs. The marginal-cost allocation can be defined as the incremental cost of adding a single customer to the system. The embedded cost, on the other hand, is the customer's share of historical costs. Of the two approaches, the latter is easier to implement and traditionally has been used for rate-making purposes.

In a cost-of-service study, the allocations are based on cost-causation relationships which define the responsibility of each customer class for imposing various costs on the utility system. For example, the construction of a gas storage facility provides additional capacity to the utility to meet the system peak demand. One can then arguably assume that the magnitude of the system peak demand itself imposes the cost of building this facility on the utility. In such a case, the cost can be allocated to each customer class in proportion to its gas demand at the time of system peak. It is also possible to argue for an alternative method that allocates the cost according to the peak demand of each customer class, regardless of its time of occurrence. There also may be other methods that can justifiably be used to allocate the costs among customer classes. The above example shows that an investment expense can be allocated using a diversity of methods. A similar diversity of allocation methods also exists for operating expenses and taxes. A cost-of-service study may require the analysis of a large number of cost items or accounts using a great diversity of allocation methods, which tends to be a time-consuming and complex task. The

analysis, however, can be greatly facilitated by the use of computerized tools. While one can use electronic spreadsheet programs to perform a gas cost-of-service study, a self-contained software package designed specifically for this purpose can accomplish this task much more efficiently. The National Regulatory Research Institute (NRRI) has developed the gas cost-of-service (GCOST) program to meet the growing need among regulatory analysts for such a tool. GCOST is designed for use on an IBM Personal Computer XT, AT, or compatible system.

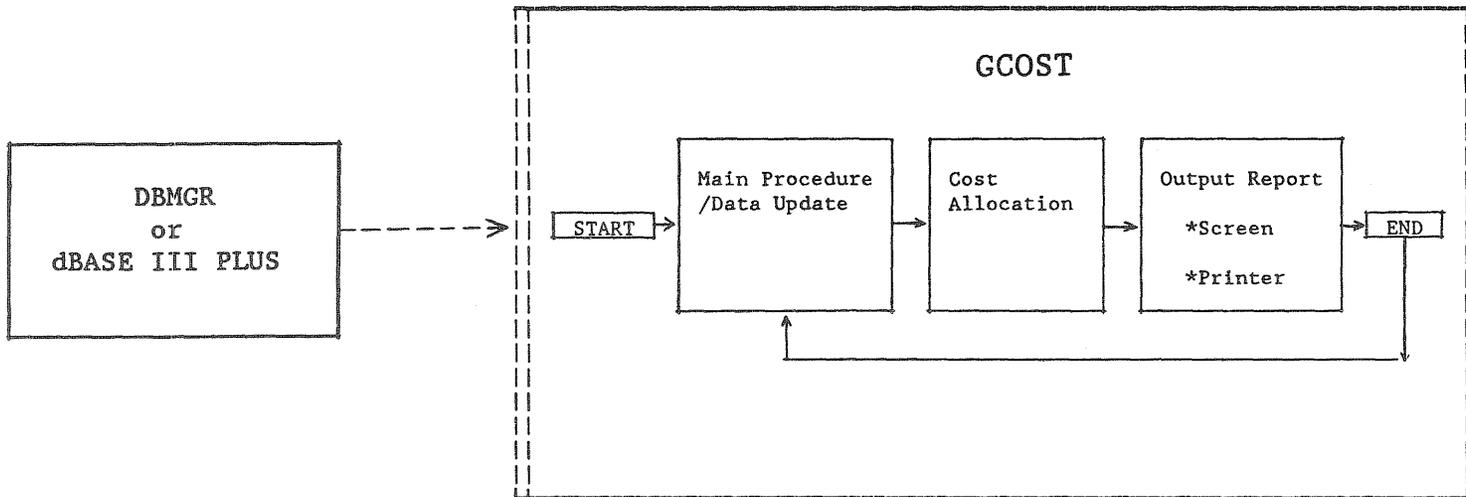
### Program Overview

GCOST is designed to perform cost-of-service studies for gas distribution utilities using the traditional embedded cost approach. It accepts accounting, financial, and operating data as user inputs. It then allocates the various items of utility plant and operating expenses to each customer class according to user-specified methods. For each cost item or account, the user has the option of specifying an allocation method or formula. This flexibility allows the user to experiment with different combinations of allocation methods.

GCOST is interfaced with a database management program, which is used to prepare input data files prior to running GCOST. The user has the choice of either using DBMGR, developed by NRRI, or the commercial software dBASE III PLUS<sup>1</sup>, as the database management program. Figure 1-1 shows the interface between DBMGR (or dBASE III PLUS) and GCOST. The dotted arrow indicates that the database management program is independent of and separate from GCOST. The figure also shows the internal structure of GCOST, which has four components or modules. The first module starts the program and familiarizes the user with the structure of GCOST. The second module is used to revise data already entered through DBMGR or dBASE III PLUS. The third module performs all the cost allocation computations. Finally, the last module displays and prints the results of the cost allocation calculations. The program flow within GCOST is shown with solid

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<sup>1</sup> dBASE III PLUS is a registered trademark of Ashton-Tate, Torrance, California.



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Fig. 1-1. Interface between database management program and GCOST

arrows in figure 1-1. The figure shows that the user can rerun the main procedure/data update module after executing the output module. Both DBMGR and GCOST are user-friendly programs. Both have menu-driven options and program-generated queries for easy use.

### Organization of the Program Documentation

The rest of this document is organized into four parts, presented in chapters 2 through 5. Chapter 2 discusses the steps involved in a cost-of-service study. It also provides a general overview of cost-of-service methods. Chapter 3 instructs the user on how to prepare the computer system and various computer files before running the program. Chapter 4 provides step-by-step instructions on running the program. Finally, chapter 5 presents various outputs generated by the program. Once the user has mastered the steps described in chapter 4 and has generated several of the outputs in chapter 5, he is ready to use GCOST to conduct his own cost-of-service study.

## CHAPTER 2

### METHOD

GCOST uses the embedded cost approach for allocating costs of service. The cost allocation process consists of several steps each of which is summarized in the following sections.<sup>2</sup>

#### Classification of Costs

Costs of service can be classified into several major categories according to a cost-causation logic. These are demand, commodity and customer costs.

##### Demand Costs

Demand or capacity costs are those imposed on the system by customer demand. They are related to maximum system requirements and do not vary directly either with the number of customers or the total amount of gas consumption. These costs include construction costs for production, storage, and transmission plants. They also include fixed operating costs related to these plant categories. Part of the construction and operating expenses for distribution plants also falls under demand costs.

##### Commodity Costs

Commodity or energy costs are directly related to the quantity of gas produced and consumed. They include the costs of feedstock, catalyst and fuel, and the variable costs of operating and maintaining production,

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<sup>2</sup> More detailed information on cost-of-service methods can be found in *Gas Rate Fundamentals*, American Gas Association, Arlington, Virginia, 1987.

storage, and transmission plants. Also included in this category are the commodity costs of purchased gas.

#### Customer Costs

Customer costs are incurred for customer-related services. They include the expenses of metering, billing and accounting customers charges, as well as capital costs for metering equipment and constructing of customers' service connections. A part of capital and operating expenses related to distribution plants is also included in this category. This category also may include sales promotion expenses and part of the administrative expenses.

#### Allocation of Costs

Once the costs of service have been classified into categories, they are allocated to different classes of customers. There are alternative ways of allocating costs of each category. As mentioned earlier, GCOST allows the user to specify a chosen allocation method for each cost category.

#### Demand Costs

There are several ways of allocating demand costs. They are the coincident-demand method, the noncoincident-demand method, and the average-and-excess method.

In the coincident-demand method, the allocation is in proportion to the customer class demand at the time of system peak. Under this method, high load factor customers who consume gas at a steady rate year-round are allocated a lower percentage of demand costs than low load factor customers whose consumption is greatest at the time of the system peak. Interruptible customers are not generally allocated any part of the demand cost under this method.

Under the noncoincident-demand method, the demand cost is allocated to each class of customer on the basis of its own peak, regardless of when it occurs. This method assigns a demand cost to interruptible customers.

The average-and-excess method is a compromise between the above two methods. Under this method, total demand costs are multiplied by the system's load factor to arrive at a cost attributed to average use and is allocated to each class in proportion to its annual consumption. The remaining cost is allocated to each class on the basis of its peak use.

#### Commodity Costs

Energy or commodity costs are allocated to each class in proportion to its gas consumption during a test period (usually a single year). If the test period was abnormally cold or warm, the sales and related cost should be normalized before allocation. Some allowance may be made for gas lost and unaccounted for in transportation to the customer. The allowance may vary among customer classes.

#### Customer Costs

Customer costs may be distributed in proportion to the number of customers or the weighted number of customers. In the latter method, it is recognized that there may be observable differences, on a per-customer basis, in costs among customer classes. The differences may occur in the frequency of meter readings and the cost of the meters. The level of complexity involved in obtaining readings and integrating meter reading charts may also vary among customer classes. Some classes, such as large industrial customers, may require separate reading schedules for each customer. Because of these differences, a customer of one class may impose more cost on the utility than a customer of some other class. These differences in cost causation on a per-customer basis are accounted for by assigning a weighting factor to each customer class.

## Direct Allocation of Costs

Some of the costs may be allocated directly to a customer class without being classified as a demand, commodity, or customer cost. For example, if the cost of certain metering equipment for the residential class is known, it can be directly allocated to this class.

## Secondary Allocation of Costs

Some costs may not be clearly classifiable according to the primary cost-causation categories such as demand, commodity, or customer. They also may not be allocable directly to a single customer class. In such cases, secondary allocations may be used. For example, costs of general plant may be allocated according to the aggregate allocation of all operating plant types. Each operating plant type, on the other hand, can be classified and allocated using primary categories of demand, commodity, and customer.

## Mixed Allocation of Costs

Finally, it may be appropriate to allocate a given cost item using a combination of methods. In this method, the cost is divided into parts and each part is allocated according to a different method.

## CHAPTER 3

### GETTING READY TO USE THE PROGRAM

Before you start using the GCOST program for the first time, it is essential to follow the steps in this chapter. This chapter contains (1) information on the microcomputer system that is needed in order to use GCOST, (2) instructions for backing up original diskettes, and (3) instructions on how to prepare input data files.

#### Recommended System Configuration

The following microcomputer system is recommended for running the GCOST program.

1. IBM XT, AT, or compatible system
2. IBM Monochrome or color display
3. Two 5 1/4 inch diskette drives and a hard disk drive
4. A printer
5. IBM PC DOS version 2.10 or higher

#### Backing Up Original Diskettes

It is always recommended that you make backup copies of your diskettes. So if a diskette is damaged or if files are accidentally erased you still will have all your information. You can use either the DISKCOPY or the COPY command provided by the DOS to create a backup copy of your diskette. The DISKCOPY command will create an exact image of an entire diskette on another diskette. It is the fastest way of backing up a diskette. In addition, the DISKCOPY command automatically initializes a new diskette, if necessary. The COPY command, on the other hand, is a slower method than the DISKCOPY. Unlike the DISKCOPY method, the COPY command does not automatically initialize a new diskette. However, it is better to use the copy command to

copy files from a diskette that has had extensive file creation and erasure activity in the past. What follows is the procedure that allows you to make backup copies of your diskettes.

1. Turn on your computer and go through the necessary steps until the prompt "C>" appears. Make sure your current directory has the DISKCOPY.COM file.
2. Type "diskcopy a: b:" and press the Enter (denoted by <CR>) key. Note that "a:" and "b:" are separated by one or more blank spaces and the quotation marks should not be typed.
3. You will see the "in use" light of drive A go on and the following message will be displayed on your screen.

```
C> diskcopy a: b: <CR>

Insert source diskette in drive A:

Insert target diskette in drive B:

Strike any key when ready

_
```

4. Insert your original program diskette into drive A and close the door.
5. Insert your backup diskette into drive B and close the door.
6. Press any key. This tells DOS that you are ready and will cause DOS to execute the DISKCOPY command. Now all information is being copied from the diskette in drive A to the diskette in drive B. You will see one "in use" light come on and then the other.
7. When the copy has been made, you will see the following message on your screen:

```
Copy complete

Copy another (Y/N)? _
```

To end the copying process, press the "N" key. The DOS prompt "C>" then will be displayed. Press "Y" if another copy is desired and repeat steps 2 through 7.

8. Now you can use the DISKCOMP command provided by the DOS to ensure that the two diskettes are identical. Make sure the file DISKCOMP.COM is in your current directory.
9. Type "diskcomp a: b:" and press the Enter key. You will see the "in use" light come on and your screen will display the following message:

```
A> diskcomp a: b: <CR>

Insert first diskette in drive A:

Insert second diskette in drive B:

Strike any key when ready

_
```

10. Your original and backup diskettes are already in drives A and B, so just press any key. This will cause DOS to execute the DISKCOMP command. You will see one "in use" light come on and then the other.
11. When the diskette comparison is completed, you will see the following message on your screen, assuming that no diskette error occurs:

```
Diskettes compare OK

Compare more diskettes (Y/N)? _
```

To end the command, press the "N" key and the DOS message "C>" will be displayed.

12. Remove both diskettes. Use a felt-tip pen to label and date the backup diskette. Place your original program diskette in a safe place. From now on you should use the backup program diskette to load and run programs.

If any diskette errors occur during either the DISKCOPY or the DISKCOMP process, repeat the entire procedure just outlined. If you still have diskette errors, your backup diskette may be defective; change your backup diskette and repeat the procedure.

### Data Preparation

GCOST requires operating and financial cost data on a utility, energy consumption and demand data for various customer classes, and cost-allocation formulas for each cost item to perform cost-of-service analysis.

### Collecting Data

The data required to run GCOST are available from a gas utility company or a public utility commission. The following are lists of major data groups needed to run the program. A detailed listing of all the data items for a sample study is shown in the appendix.

### Utility Data

1. Plant, equipment, and other capital assets
2. CWIP allowed in ratebase
3. Depreciation reserve and annual depreciation expenses
4. Gas service operating revenues
5. Operation and maintenance expenses for each type of plant
6. Customer accounts expenses
7. Customer service and information expenses
8. Sales expenses
9. Administrative and general expenses
10. Taxes

## Customer Data

1. Peak demand (both coincident and noncoincident) for each customer class.
2. Gas consumption for each customer class
3. Number of customers for each customer class

## Cost-Allocation Formula

For each cost item (shown in the appendix), the user needs to specify a cost allocation formula. The following is a list of keywords used by GCOST to identify a cost allocation formula:

- CUSTOMER -- Allocation on the basis of the weighted number of customers<sup>3</sup> in each class.
- ENERGY -- Allocation on the basis of gas consumption of each customer class.
- PPLANT -- Allocated pro rata according to the allocation of production plant. This category also includes storage plants.
- TPLANT -- Allocated pro rata according to the allocation of transmission plant.
- DPLANT -- Allocated pro rata according to the allocation of distribution plant.
- TDPLANT -- Allocated pro rata according to the allocation of transmission and distribution plants.
- PTD -- Allocated pro rata according to the allocation of production, storage, transmission, and distribution plants.
- UPIS -- Allocated pro rata according to the allocation of total utility plant in service.
- NPIS -- Allocated pro rata according to the allocation of net plant in service.

<sup>3</sup> To allocate costs on the basis of actual number of customers, the user should use direct allocation. See the keyword DIRECT later in this section.

- OPREV -- Allocated pro rata according to the allocation of total operating revenue.
- O&MEW -- Allocated on the basis of total O&M expenses less administrative and general expenses.
- O&ME -- Allocated on the basis of total O&M expenses.
- DEMAND(SCO) -- Allocated on the basis of class coincident peak demand.
- DEMAND(NCO) -- Allocated on the basis of class noncoincident peak demand.
- DEMAND(A&E) -- Allocated on the basis of class average and excess peak demand.
- DIRECT(X1;X2/Y1;Y2/Z1;Z3/W1;W4) -- Direct assignment of a fraction of the account to a customer class.  
Example:  
 DIRECT(20;3/50;4/30;5)  
 In this example, 20 percent of the total amount is allocated to the third customer class, 50 percent is allocated to the fourth customer class, and 30 percent is allocated to the fifth customer class.
- MIXED(X1;X2/Y/Z/W1;W2) -- Mixed allocation of the account under consideration. Possible modes are direct assignment, customer related allocation, energy related allocation, and demand related allocation.  
Example:  
 MIXED(10;3/20/30/40;A&E)  
 In this example, 10 percent of the total amount is assigned directly to the third customer class, 20 percent is allocated on the basis of the weighted number of customers, 30 percent is allocated on the basis of class energy consumption, and the remaining 40 percent is allocated on the basis of the demand of energy by the customer class using the average and excess method.
- SUM(X1;X2) -- Allocated pro rata according to the allocation of items X1 through X2.
- SUM2(X1;X2;X4;X7) -- Allocated pro rata according to the allocation of items X1, X2, X4, and X7.

## Entering Data Into the Computer

GCOST allows computer data entry/update in two forms. The user initially enters data into database files for later processing by the program. This is accomplished by using a database management program. The data can be updated either (1) using database editing operations or (2) using worksheets while running the program. For extensive data entry operations such as those required during the initial set-up phase of a cost-of-service study, database files should be used. For minor modifications to the input data such as those needed for a "what if" type of analysis, the worksheets should be used.

### Data Entry Using Database Files

The database files used by GCOST have a structure similar to the commercial software dBASE III PLUS.<sup>4</sup> The user can use either dBASE III PLUS or the program DBMGR which comes with the GCOST package. The following is a description of DBMGR with references to dBASE III PLUS where appropriate. For a full description of dBASE III PLUS, the user should consult the appropriate users' manual.

The NRRI developed DBMGR in 1985 as a database management tool. DBMGR permits one to create, access, and update database files. Like dBASE III PLUS, DBMGR uses a relational database structure. A database management system (DBMS) that uses this relational model is called a relational DBMS. Functionally, DBMGR is similar to dBASE III PLUS in that one can access and modify the same database interchangeably with either program. But the query and reporting facilities available from dBASE III PLUS are absent in DBMGR. The remainder of this section contains a description of the data structure supported by the DBMGR program and its operations. The discussion holds true for dBASE III PLUS as well.

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<sup>4</sup> The sample runs reported in the current study were made using dBASE III-PLUS although DBMGR also could have been used. The user, however, is cautioned against using earlier versions of dBASE III.

Like dBASE III PLUS and most DBMSs that run on microcomputers, DBMGR organizes data into two-dimensional tables of rows and columns. Each row is a record and is assigned a record number. Each column is a field and has a distinct name, called a field name, up to ten characters long.

The following illustration gives a conceptual view of such a table.

	<u>Field 1</u>	<u>Field 2</u>	<u>Field 3</u>	
	<u>NAME</u>	<u>ADDRESS</u>	<u>PHONE-NO</u>	<u>_____</u>
Record 1				
Record 2				
Record 3				
.				
.				
.				

In this example, NAME is the field name of the first column; ADDRESS, that of the second column; and so forth.

All items in a column (field) are of the same data type. A data type is a high-level representation of data as seen by the user and has a corresponding internal binary form understood by the computer. Four data types are provided by DBMGR: character, date, logical, and numeric. The following is a brief discussion of these data types.

Character data type--Represents any printable character including letters, numbers, and punctuation marks that can be entered from the keyboard. It is often convenient to use the character data type for numbers such as telephone numbers and zip codes which will not be used in calculations. The maximum size of a character data type is 254.

Date data type--Represents dates in the mm/dd/yy format. The size of a date data type is always 8.

Logical data type--Represents information which have a true/false character. Examples of this data type include items such as paid/unpaid and male/female. A logical data type is always 1 byte long.

Numeric data type--Represents integers or decimal quantities that will undergo computations. The size of a numeric data type is the number of digits it can hold (the decimal point, if any, counts as one digit).

DBMGR uses these data types as building blocks to construct database file structures matching the body of data that they are intended to represent. The following illustrates the structure of a hypothetical database file containing shipping information of, say, a mail-order company.

Structure for database: example.dbf  
Number of data records: 30  
Date of last update : 08/08/88

Field	Field name	Type	Width	Dec
1	SHIP-TO	Character	20	0
2	DATE-SHIP	Date	8	0
3	PRODUCT	Character	30	0
4	QUANTITY	Numeric	5	0
5	AMOUNT-DUE	Numeric	7	2
6	INV-PAID	Logic	1	0
**Total**			72	

This display shows the file name, the number of records in the file, when the file was last updated, and specifications of all the fields of a record. For each field these specifications are the name of the field (Field name), its data type (Type), size of the field (Width), and decimal places, if any, of the field (Dec). Each record in this example database file has six pieces of information indicating the customer receiving the shipment, date the shipment was made, what was shipped and how much, total amount due from the customer, and the payment status, respectively.

#### Running DBMGR

To start DBMGR, make sure the program DBMGR.EXE is in your current directory, type "dbmgr" and press the return key. A menu of seven options appear on the display screen. They are APPEND, BROWSE, CREATE, DISPLAY, EDIT, PRINT, and USE. An option is selected by entering the option number and pressing the ENTER or RETURN key.

APPEND is used to add new data records to an existing database file. A data entry form will be displayed by the program for one to fill in appropriate information for each added record. This entry form is generated

according to the structure of the database file under consideration. Using the example of the mail-order company, the entry form would look like the following illustration.

Record No.	31	File name: example.dbf
SHIP-TO	_____	
DATE-SHIP	____/____/_____	
PRODUCT	_____	
QUANTITY	_____	
AMOUNT-DUE	_____.	
INV-PAID	_____	

The database file name and the record number are shown at the top of the entry form. Field names are listed on the left-hand side of the form, with corresponding blank spaces on the right-hand side. The size of blank spaces is determined by the width of each field specified in the file structure. Note that two slashes ("/") are used for date data type to conform to the mm/dd/yy format. Note also the presence of a decimal point for field AMOUNT-DUE, which represents a decimal quantity (see the example file structure given above). The program will check each user input to verify its validity. For example, if one enters a string of characters where the field requires numeric data type, this entry will be rejected by the DBMGR program. As another example, if one enters 08/40/89 or 15/02/89 for a date data field, similar action will be taken by the program to block such an erroneous entry.

BROWSE is used to display the content of the entire database file under consideration. While in this mode, field names are listed across the top of the display screen, with individual records displayed in the remainder of the screen. DBMGR allows one to use various cursor movement keys in the numeric keypad area of the keyboard to move through the entire file. For example, pressing the PgDn key will bring into view the next set of records that the display screen could not hold previously. More information on cursor movement keys is provided under the EDIT option.

CREATE allows one to build a file structure similar to example.dbf shown on page 15. While in the CREATE mode, users can interactively enter appropriate information regarding the field name, data type, and so forth. DBMGR has a built-in facility to check the validity of the information entered from the keyboard. For example, if one enters a field name that already has been assigned to a previous field definition, DBMGR would display a "duplicate field name" message and would ask the user for an alternate field name.

DISPLAY is used to list the structure of the current file in use.

The EDIT option is used to provide the user with a full screen editing environment for data update purposes. Like the BROWSE option, one can use cursor movement keys to move through the entire file in order to locate the appropriate record and field desired for data update. The same built-in facilities for data validity checking described under the APPEND option also apply here. Any invalid information entered while in this EDIT mode will be identified and rejected for re-entry. Upon completion and leaving the EDIT mode, the user has the option of either saving or rejecting changes made to the file.

The following operations are used to move around within the database file.

1. The right and left arrow keys move the cursor one character forward and backward respectively within a field.
2. The Return (or Enter) key moves the cursor to the beginning of the next field.
3. The Home key moves the cursor to the beginning of the previous field.
4. The Ctrl-right arrow key moves the cursor to the next screen horizontally.
5. The PgDn key moves the cursor to the next screen vertically.
6. The PgUp key moves the cursor to the previous screen vertically.
7. The Esc key ends the EDIT mode.

PRINT is used to generate a hard-copy printout of the database file.

USE provides access to a particular database file. Unlike dBASE III PLUS which permits ten database files to be accessed all at one time, DBMGR uses one file at a time. When this option is chosen, the user is asked the name of the database file to be accessed by the program.

Altogether, these seven options provided by DBMGR permit one to store and organize data in a database.

#### Database Files Used by GCOST

The sample run reported here uses data for a gas utility located in the southwest United States. There are three input database files used by GCOST. For the sample run, they have been named CLASS.DBF, ACCTCATG.DBF, and ACCTDATA.DBF. These file names are user-specified and can be changed at will. They must, however, include the suffix ".DBF". It is recommended that the file names be changed for running different cases with GCOST. The contents and structures of the input database files used by GCOST are described below.

#### Database File: CLASS.DBF

This database file contains data on the characteristics of the utility's classes of service. The structure for this database file is shown in the top part of figure 3-1. The first field contains a customer class identification code. The second field contains a unique name of the customer class under consideration. Field 3 represents the total number of customers in a given class. Field 4 contains information about the total volume of gas consumed by this customer class. Field 5 contains data on class coincident peak demand. The class noncoincident peak demand is reported in field 6. Note that the units for the data in fields 4, 5, and 6 can be in Mcf, MMcf, or therms as long as consistency among classes is maintained. A listing of CLASS.DBF is provided in the appendix.

Database File: ACCTCATG.DBF

Data on utility plant, operations, and maintenance expenses and taxes can be combined into categories. ACCTCATG.DBF contains descriptive titles

Structure for database: CLASS.DBF  
Number of data records: 0  
Date of last update : 03/01/89

Field	Field name	Type	Width	Dec
1	CUSTOM-ID	Character	2	
2	CLASS-NAME	Character	30	
3	CUSTOM-NUM	Numeric	10	
4	VOLUME	Numeric	15	
5	COINC-PEAK	Numeric	10	
6	NONCO-PEAK	Numeric	10	
**Total**			198	

Structure for database: ACCTCATG.DBF  
Number of data records: 0  
Date of last update : 03/01/89

Field	Field name	Type	Width	Dec
1	CAT-NO	Character	3	
2	CAT-TITLE	Character	50	
**Total**			54	

Structure for database: ACCTDATA.DBF  
Number of data records: 0  
Date of last update : 03/01/89

Field	Field name	Type	Width	Dec
1	CAT-NO	Character	3	
2	ACCOUNT-NO	Character	6	
3	ACT-NAME	Character	40	
4	AMOUNT	Numeric	10	
5	ALOC-ID	Character	30	
**Total**			90	

Fig. 3-1. Structures for data base files CLASS.DBF, ACCTCATG.DBF, and ACCTDATA.DBF

for these categories. Some examples of category titles are natural gas production plant, transmission plant, depreciation reserve, and natural gas production expenses. The structure for this file is displayed in the middle part of figure 3-1. This file contains only two data fields. The first field is an item category identification code whose description is given in the second field. The category identification code provides a link between this database file and another database file named ACCTDATA.DBF (see the next file description). ACCTCATG.DBF is listed in the appendix.

Database File: ACCTDATA.DBF

This database file contains detailed accounting data and allocation formulas on the various items of utility plant, operations and maintenance expenses, and taxes. These data as well as the account categories listed in ACCTCATG.DBF closely resemble those listed in an annual report submitted by a gas distribution utility to a public utility commission. The bottom part of figure 3-1 shows the structure for this file. The first field is an item category identification code. This is the same field defined in the ACCTCATG.DBF. The second field contains the account number for the item under consideration. The descriptive title and the dollar value of this account are represented in fields 3 and 4, respectively. The last field contains the allocation keyword (see pages 11 through 13) used by the GCOST program to distribute the cost among customer classes. ACCTDATA.DBF is listed in the appendix.

Using Worksheets for Data Entry

The worksheets in GCOST are designed for on-line data editing operations while running the program. The procedure for using worksheets is described in chapter 4.

## CHAPTER 4

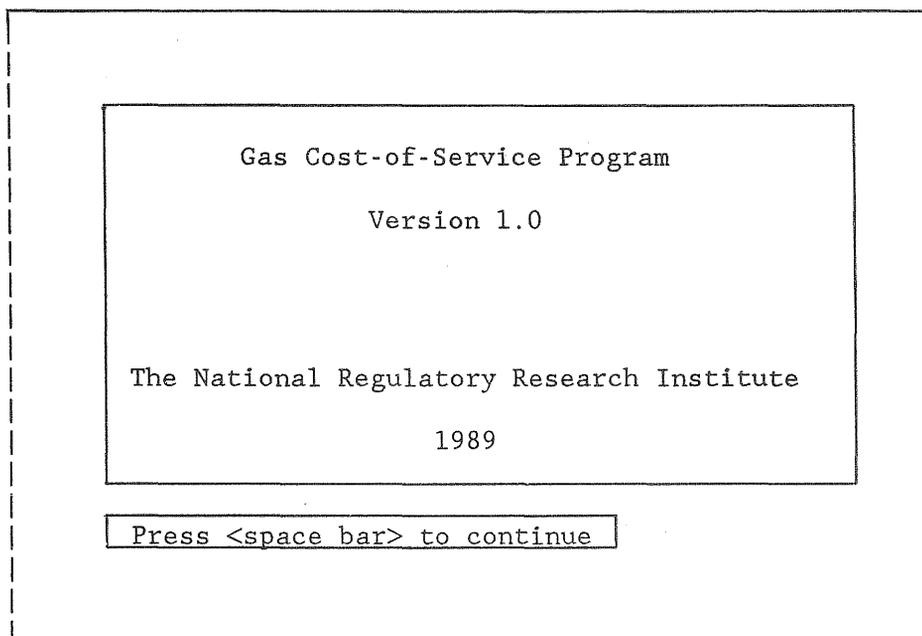
### STARTING THE PROGRAM

This chapter contains the procedure for starting the GCOST program and a description of the program structure.

#### Loading the Program

It is assumed that you have already made backup copies of all the program and data files. Now create a subdirectory on your computer and give it an appropriate name (GCOST is an excellent choice). Copy all the program and data files into this directory. Then enter "GCOST" at the DOS prompt "C>". This starts loading the program.

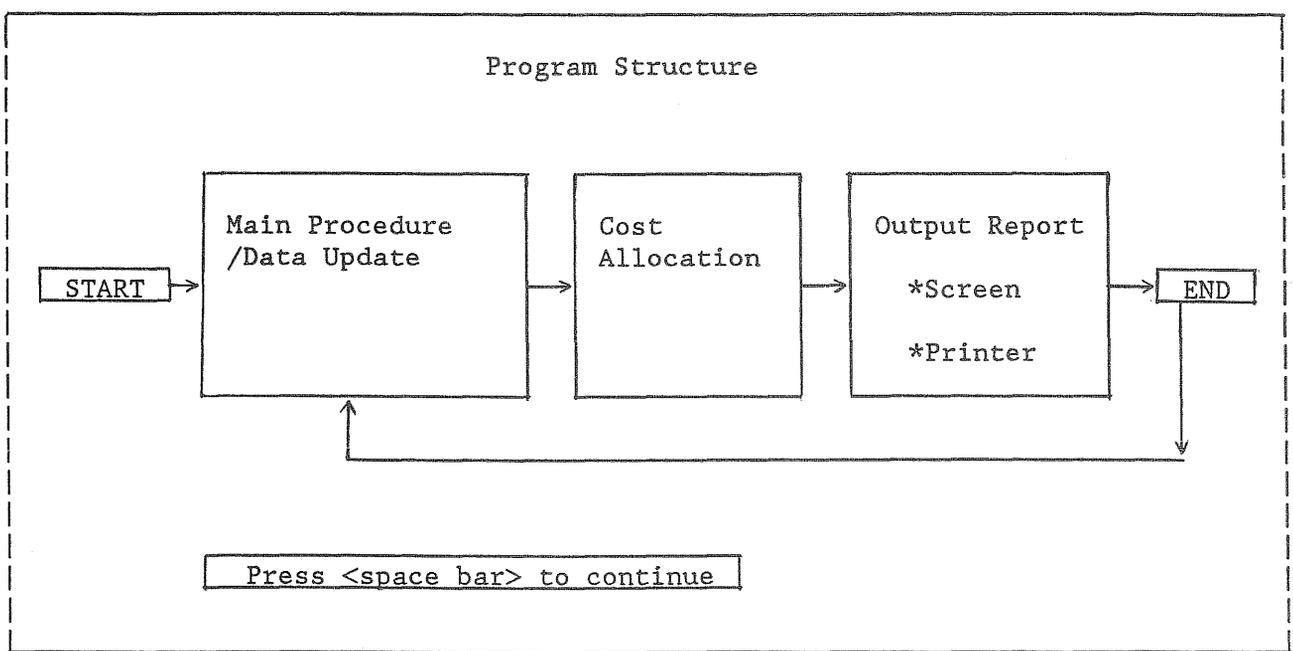
As the program loads, the program screen display appears. The first display on your monitor screen is illustrated below.



This display shows that the program you are using is the gas cost-of-service program (GCOST) developed by The National Regulatory Research Institute. Note that the message "Press <space bar> to continue" in the above illustration is boxed, a notation used throughout this manual to represent a "highlight" on your display screen. The purpose of displaying a highlighted message is to bring the user's attention to the fact that the computer is awaiting your response in order to continue with the next program instruction. In the above illustration, the program execution pauses at this point until you press the space bar on your keyboard. Note that pressing any other keys will not cause the program execution to continue; only the space bar--the key enclosed in the brackets "< >" of the message--is recognized by the computer as representing the user's intention to continue program execution.

Program Structure

Pressing the space bar on your keyboard will clear your current display screen and immediately bring out the display shown in the next illustration.



This display shows the basic structure of the GCOST program. As mentioned in chapter 1, the GCOST program is composed of four modules: the start module, the main procedure/data update module, the cost allocation calculation module, and the output module. The arrows indicate the directions of program execution. For example, you would need to complete the data revisions in the main procedure/data update module before you could perform any cost allocations, as indicated by the rightward arrow between the second block and the third block on your display. The upward and downward arrows indicate the possible paths of performing "what-if" type studies. Once again, a highlighted message is displayed near the bottom of the screen telling you that the program execution is temporarily halted until you instruct the computer to continue by pressing the space bar on your keyboard. Pressing the space bar will clear your screen. The following message will appear:

MOVING TO THE NEXT (MAIN PROCEDURE/DATA UPDATE) MODULE

PLEASE WAIT

After several moments, the screen display will clear and the following display will appear:

Main Procedure Options

1. Data entry/update
2. Cost allocation calculation
3. Quit the program

Enter the desired option number ==>

Displays of this type are commonly referred to as "menus," meaning that all user options are presented in a list. You choose the particular option you want from that list. A highlighted message is displayed indicating that the computer is ready to take your selection. Select the desired option by typing the option number, which appears at the cursor position as you type it, and pressing the Enter key.

If option 3--quitting the program--is selected, then the program execution stops here and the computer returns to DOS. A "C>" will be displayed indicating DOS is ready. Options 1 and 2 are described next in detail. To select the data entry/update option, type 1 and press the Enter key.

#### Data Entry and Update Using Worksheets

Your screen should have the following display:

<p><u>Data Category</u></p> <ol style="list-style-type: none"><li>1. Customer class data</li><li>2. Account data</li><li>3. Return to previous (main procedure) menu</li><li>4. Quit the program</li></ol> <p>Enter the desired option number ==&gt;</p>
--

Data used in cost-of-service analyses are generally grouped into two categories: customer class data and account data, listed here as options 1 and 2, respectively. These data categories have already been defined in chapter 3. Option 3 provides a means of returning the program control to the previous menu. When option 3 is selected, the main procedure menu, will reappear on your screen. If you select either option 1 or 2, the next menu containing entry/update options will be presented. Now select 2. The following display appears:

Data Entry/Update Options

1. Read data from a database file
2. Use data currently in memory
3. Return to previous (data category) menu
4. Quit the program

Enter the desired option number ==>

Option 1 lets you retrieve data stored on a database file already created using DBMGR or dBASE III PLUS (see chapter 3). Option 2 gives you access to the data already in the computer's memory. It is most frequently used with parametric analyses in which the effect of changing a single data item or a few data items is to be studied. Option 3 returns the program control to the previous menu--the data category menu shown in the previous illustration. Select 1. The following message appears.

Enter database file name for account categories:

Enter ACCTCATG. The following messages appear in succession:

Processing file for account categories  
File successfully processed

Press a key to continue

Press any key. The following message appears.

Enter database file name for account data:

Enter ACCTDATA. The following messages appear in succession.

Processing file for account data

File successfully processed

Press a key to continue

There may be some delay between the first two messages as the file for the account data file is likely to be large. When you see the third message, the computer has actually loaded the account titles and account data into its memory and is ready to display these in worksheet format. Press any key and the display shown in figure 4-1 appears.

#### Moving Around the Worksheet

What you see in figure 4-1 is the worksheet used in the program to prepare input data. The worksheet is organized into rows and columns. Columns are lettered A, B, C., etc., while rows are numbered 1, 2, 3, etc.. Each intersection of a column and a row is an entry position, called a "cell". It is referred to by its coordinates: A1, B1, C2, etc. The following is a list of columns and related data as it appears on the account data worksheet.

Column A -- Account numbers used by the user.

Column B -- Account description.

Column C -- Total dollar value of each account.

Column D -- Keywords used by the program to allocate the dollar amount among customer classes. The keyword definitions are given in chapter 3 (see pages 13 and 14).

WORKSHEET FOR ACCOUNT DATA INPUT

A	1	=====>	edit line
A	B	C	D
Account Number	Account Description	Total Dollars	Allocation Form
1	Natural Gas Production Plant		
2	325 land	0	demand (nco)
3	325 producing leaseholds	0	demand (nco)
4	325 gas rights	0	demand (nco)
5	325 rights-of-way	0	demand (nco)
6	325 other land and land rights	0	demand (nco)
7	326 gas well structures	0	demand (nco)
8	327 field compressor station st	0	demand (nco)
9	328 field meas and reg station	0	demand (nco)
10	330 producing gas wells-well co	0	demand (nco)
11	331 producing gas wells-well eq	0	demand (nco)
12	332 field lines	0	demand (nco)
13	333 field compressor station eq	0	demand (nco)
<u>14</u>	334 field meas and reg station	0	demand (nco)

Press arrow keys to move around the worksheet

Press <Home> key to exit

message line



Fig. 4-1 Worksheet for updating input data

The description of the rows are as follows:

<u>Record Number</u>	<u>Used/Reserved for</u>
1	Title for Natural Gas Production Plant
2-19	Entries for Natural Gas Production Plant
20	Title for Products Extraction Plant
21-29	Entries for Products Extraction Plant
30	Title for Manufactured Gas Production Plant
31-35	Entries for Manufactured Gas Production Plant
36	Title for Underground Storage Plant
37-48	Entries for Underground Storage Plant
49	Title for Other Storage Plant
50-60	Entries for Other Storage Plant
61	Title for Liquified Natural Gas Terminating and Processing Plant
62-70	Entries for Liquified Natural Gas Terminating and Processing Plant
71	Title for Transmission Plant
72-79	Entries for Transmission Plant
80	Title for Distribution Plant
81-95	Entries for Distribution Plant
96	Title for General Plant
97-109	Entries for General Plant
110	Title for Intangible Plant
111-114	Entries for Intangible Plant
115	Title for CWIP Allowed in Ratebase
116-119	Entries for CWIP Allowed in Ratebase
120	Title for Depreciation Reserve
121-130	Entries for Depreciation Reserve
131	Title for Working Capital
132-135	Entries for Working Capital
136	Title for Adjustments to Ratebase
137-139	Entries for Adjustments to Ratebase
140	Title for Gas Service Revenues
141-146	Entries for Gas Service Revenues
147	Title for Other Operating Revenues
148-159	Entries for Other Operating Revenues
160	Title for Natural Gas Production Expenses
161-181	Entries for Natural Gas Production Expenses
182	Title for Products Extraction Expenses
183-205	Entries for Products Extraction Expenses
206	Title for Exploration and Development Expenses
207-211	Entries for Exploration and Development Expenses
212	Title for Other Gas Supply Expenses
213-237	Entries for Other Gas Supply Expenses
238	Title for Manufactured Gas Production Expenses
239-247	Entries for Manufactured Gas Production Expenses
248	Title for Underground Storage and Processing Expenses
249-270	Entries for Underground Storage and Processing Expenses

271	Title for Other Storage Expenses
272-287	Entries for Other Storage Expenses
288	Title for Liquefied Nat Gas Terminating and Proc Expenses
289-305	Entries for Liquefied Nat Gas Terminating and Proc Expenses
306	Title for Transmission Expenses
307-325	Entries for Transmission Expenses
326	Title for Distribution Expenses
327-349	Entries for Distribution Expenses
350	Title for Customer Accounts Expenses
351-356	Entries for Customer Accounts Expenses
357	Title for Customer Service and Information Expense
358-362	Entries for Customer Service and Information Expenses
363	Title for Sales Expenses
364-368	Entries for Sales Expenses
369	Title for Administrative and General Expenses
370-384	Entries for Administrative and General Expenses
385	Title for Deductions from Operating Income
386-387	Entries for Deductions from Operating Income
388	Title for Depreciation Expenses
389-398	Entries for Depreciation Expenses
399	Title for Other Income
400-402	Entries for Other Income
403	Title for Other Expenses
404-405	Entries for Other Expenses
406	Title for Income Taxes
407-409	Entries for Income Taxes
410	Title for Property Taxes
411-412	Entries for Property Taxes
413	Title for Other Taxes
414-415	Entries for Other Taxes
416	Title for Miscellaneous Accounts
417-419	Entries for Miscellaneous Accounts
420	End of File

The cell that is available for immediate use, known as the active cell, is highlighted by a cell pointer. The coordinates of the active cell are shown in the upper left corner of your screen, at the beginning of the edit line (see figure 4-1). The size of the actual worksheet provided by the GCOST program is 4 columns by 420 rows. Your screen displays only a small portion of the actual worksheet available to you. You can imagine the screen as a "window" to your actual worksheet. The illustrated screen shows 4 columns and 14 rows. Notice the message line at the bottom of your screen. It provides a definition of the current special key designations. For example, pressing the Home key causes the program to terminate the worksheet operation and return the program control to the previous menu.

You can use arrow keys to move the cell pointer around the worksheet. Press the right arrow key once, you will notice the cell pointer move one cell to the right. The coordinates shown on the edit line are now B1. Press the downward arrow key once and you will notice the cell pointer move one cell downward to row 2. The cell pointer is now in row 2, column B; and this cell, cell B2, is now the active cell.

Now press the right arrow key several times until the cell pointer reaches the right edge of your screen display (column D). Press the right arrow key once again, you will hear a short beeping sound and the cell pointer will remain stationary at column D. This is the program's signal to tell you that the active cell is now at the right edge of the actual worksheet. Press the left arrow key several times until you reach column A. Now press the left arrow key once more. You will again hear a beep indicating that you have reached the left edge of the worksheet. Move the cell pointer to row 1 using the up arrow key. You will hear the the beeping sound once more. This time the active cell has reached the top edge of the worksheet. Notice that your current screen displays rows 1-14. Now press the PgDn key. The screen display changes and records in rows 15-28 come into view. Press the PgUp key to return to the previous screen.

So far you have learned how to move the active cell around the actual worksheet by various combinations of the four arrow keys. What follows is a discussion of writing information onto the worksheet.

Move the cell pointer to column A, row nineteen and type "339". Pause at this point and look at the edit line of the worksheet. On the edit line is the number "339". Press the Enter key. The edit line clears and the number "339" is placed in the active cell (A19). Now type "999" and you will see this number appear on the edit line. This time press the down arrow key instead of the Enter key. Two operations take place: first, the number "999" replaces "339" in cell B19; second, the cell pointer moves one cell downward to location B20 and this cell now becomes the active cell. You can use any arrow key instead of the Enter key to end an entry and write the information on the worksheet. Note that you cannot change contents of

certain cells (including B20). This has been designed to ensure that the main account categories are changed only in the database files and not on the worksheets. The worksheet is programmed to recognize what type of information--an alphabetic expression such as "residential" or a numerical value such as 200--is relevant to the active cell.

Now press the <Home> key. The data entry/update menu reappears. Now perform the following operations in sequence.

1. Enter 3 to go back to the data category menu,
2. Enter 1 to select customer class data,
3. Enter 1 to read data from a database file,
4. Enter "CLASS" as the file name for customer class data.

Now go through the usual sequence of messages (similar to those seen earlier for ACCTCATG and ACCTDATA) to arrive at the worksheet for customer class data. The following is a list of columns and related data as they appear on the customer class data worksheet.

Column A -- The unique name of the customer class.

Column B -- This column contains the weighted number of customers in each customer class.

Column C -- Total gas consumption in MMcf, Mcf or Therms for each customer class.

Column D -- Class coincident peak demand. The reporting unit can be MMcf, Mcf, or Therms, as long as consistency among customer classes is maintained.

Column E -- Class noncoincident peak demand. Use the same unit as for column D.

Inspect the data and make changes if necessary. Press the <Home> key to exit the worksheet.

If you need to make further changes, go back to the data category menu, select the proper data category and move to the data entry/update option. The data from database files have already been loaded into the memory, so

select 2 (use data in memory) for all data update options with the worksheet.

Once all data updating operations have been completed, go back to the main procedures menu. Select 2 to start cost allocation calculations. Then a series of messages and prompts appear before the program proceeds with cost allocations. Enter the appropriate response to these prompts to proceed to the next step. While performing cost allocations, the status of the calculations is displayed. The status is indicated by the number of records processed, 420 altogether. Finally, another series of messages and prompts takes the user to the output module. The operations related to the program output are described in the next chapter.

## CHAPTER 5

### PROGRAM OUTPUTS

This chapter gives a detailed description of the output produced by the GCOST program. Two forms of output are supported by the program. The first is a screen display on the video monitor, and the second is a hard-copy printout. The amount of information reported and the reporting format are the same for both devices.

#### Output Options

When the output module is loaded and ready, the program asks for the study name. After this is entered, the output-device options menu appears on your display screen. It is illustrated below.

Display Options

1. Screen display
2. Printer display
3. Return to main procedure options menu
4. Quit the program

Enter the desired option number ==>

Option 1 will direct the output to your video monitor, while option 2 produces hard-copy printouts on your printer. Selecting option 3 returns the program to the main procedure options menu. Finally, selecting option 4 returns the program control to DOS.

The following display appears on your screen:

<u>Output Options</u>
1. Summary Table
2. Semi-Summary Tables
3. Major Account Category Tables**
4. Return to the Previous Menu
5. Quit the program
Enter the desired option number ==>

This output options menu lets you select which reports you would like to see. Selecting option 1 will display a table summarizing the allocation of revenues, expenses, and rate base components to the various classes of service. Options 2 and 3 will lead you to the next set of options menu. Select 3. Your screen will have the following display.

<u>Semi-Summary Output Options</u>
1. Production Plant in Service
2. Utility Plant in Service
3. Total O&M Expenses
4. Total Operating Expenses
5. Operating Revenues
6. Taxes
7. Rate Base
8. Return to the Previous Menu
9. Quit the Program
Enter the desired option number ==>

---

\*\* This option is not used for screen displays.

Select 4. A table containing cost allocations for operating expenses will appear. The table will show the same results as in figure 5-3 on page 40.

#### Display Screen Output

What you see on the screen is a part of the table containing results of cost allocation of operating expenses. Each component of operating expenses is listed on the left. The rest of the display shows, in units of thousands of dollars, the total costs as well as the allocations for each customer class.

The cursor position is highlighted by a rectangular bar. You can use the left and right arrow keys to move the cursor position. Press the right arrow key twice to move the cursor to the right edge of your screen. Press the right arrow key once more, you will notice that the next customer class is brought into view while the first customer class disappears off the screen. You can view the entire table by scrolling the screen leftward and rightward.

Notice the message line at the bottom of your screen. You can press the Home key to return to the semi-summary output options menu. All the output tables are displayed the same way on your screen.

#### Printer Output

The printer provides an alternative output medium which produces hard-copy printouts. All the reports available on the display screen are included in the printer output. Unlike the screen display, however, the printer output shows the cost figures in actual dollars rather than in units of thousands of dollars. In addition, major account category tables, which are not available for display on the screen, can be generated as hard-copy printouts. To try this option, successively select 8 and 4 to return to display options menu. Then successively select 2 and 3. The display shown on the next page appears on your screen.

Major Account Category Tables

1. Natural Gas Production Plant	21. Manufactured Gas Prod Expenses
2. Products Extraction Plant	22. Und Storage & Proc Expenses
3. Manufactured Gas Prod Plant	23. Other Storage Expenses
4. Underground Storage Plant	24. LNG Term & Processing Expenses
5. Other Storage Plant	25. Transmission Expenses
6. Long Term & Processing Plant	26. Distribution Expenses
7. Transmission Plant	27. Customer Accounts Expenses
8. Distribution Plant	28. Customer Service & Info Expenses
9. General Plant	29. Sales Expenses
10. Intangible Plant	30. Administrative & Gen Expenses
11. CWIP Allowed in Rate Base	31. Deductions from Operating Income
12. Depreciation Reserve	32. Depreciation Expenses
13. Working Capital	33. Other Income
14. Adjustments to Rate Base	34. Other Expenses
15. Gas Service Revenues	35. Income Taxes
16. Other Operating Revenues	36. Property Taxes
17. Natural Gas Production Expenses	37. Other Taxes
18. Products Extraction Expenses	38. Miscellaneous Accounts
19. Exploration & Dev Expenses	39. Return to Previous Menu
20. Other Gas Supply Expenses	40. Quit the Program

Enter the desired option number ==>

Make sure that your printer's power is on and that you have sufficient paper supply. Adjust the paper position by the manual paper feed knob so that the perforated line is aligned with the print head. Select 8. The table shown on figure 5-5 will be printed out. You can try printing out other tables from the current as well as previous menus. A set of sample printouts is shown in figures 5-1 through 5-6.

XYZ Gas Company  
Summary Table  
(In Dollars)

Acct. Description		total	residential	commercial	industrial
Total Operating Revenues	\$	2,586,577,900	1,316,174,980	595,978,110	456,579,200
Total Operating Expenses	\$	2,391,046,700	1,234,669,950	528,617,440	429,760,580
Net Operating Income	\$	195,531,008	81,505,056	67,360,624	26,818,600
Rate Base	\$	1,989,030,010	1,005,600,000	560,809,920	257,142,000
Rate of Return	%	9.83	8.11	12.01	10.43

Fig. 5-1. Summary table

**XYZ Gas Company**  
**Summary Table**  
(In Dollars)

Acct. Description		total	interruptible
Total Operating Revenues	\$	2,586,577,900	217,845,200
Total Operating Expenses	\$	2,391,046,700	197,998,784
Net Operating Income	\$	195,531,008	19,846,390
Rate Base	\$	1,989,030,010	165,478,304
Rate of Return	%	9.83	11.99

Fig. 5-1. Summary table--Continued

**XYZ Gas Company**  
**Allocation of Rate Base**  
(In Dollars)

Acct. Description	total	residential	commercial	industrial
Net Plant in Service	\$ - 1,331,422,980	673,701,120	388,000,000	162,426,208
Working Capital	\$ 483,433,980	243,616,608	123,123,800	72,653,600
CWIP Allowed in Ratebase	\$ 174,173,408	88,282,280	49,686,060	22,062,150
Adjustments to Ratebase	\$ 0	0	0	0
<b>Total Rate Base</b>	<b>\$ 1,989,030,010</b>	<b>1,005,600,000</b>	<b>560,809,920</b>	<b>257,142,000</b>

Demand Component : \$ 618,913,280  
Energy Component : \$ 332,053,410  
Customer Component: \$ 943,118,720  
Direct Assignment : \$ 94,944,944

Fig. 5-2. Rate base allocation

**XYZ Gas Company**  
**Allocation of Rate Base**  
(In Dollars)

Acct. Description	total	interruptible
Net Plant in Service	\$ 1,331,422,980	107,295,504
Working Capital	\$ 483,433,980	44,039,900
CHIP Allowed in Ratebase	\$ 174,173,408	14,142,920
Adjustments to Ratebase	\$ 0	0
<b>Total Rate Base</b>	<b>\$ 1,989,030,010</b>	<b>165,478,304</b>
Demand Component :	\$ 618,913,280	
Energy Component :	\$ 332,053,410	
Customer Component:	\$ 943,118,720	
Direct Assignment :	\$ 94,944,944	

Fig. 5-2. Rate base allocation--Continued

**XYZ Gas Company**  
**Allocation of Operating Expenses**  
(In Dollars)

Acct. Description	total	residential	commercial	industrial
O & M Expenses	\$ 2,023,607,040	1,046,372,990	444,683,900	365,189,090
Depreciation Expenses	\$ 165,533,904	85,594,816	36,375,768	29,872,990
Taxes other than Income	\$ 36,562,140	18,567,104	9,460,575	5,512,219
Income Taxes	\$ 165,343,808	84,134,880	38,097,160	29,186,260
Adminis. & General Expns	\$ 183,564,608	94,100,360	42,764,240	31,456,320
<b>Total Operating Expenses</b>	<b>\$ 2,391,046,700</b>	<b>1,234,669,950</b>	<b>528,617,440</b>	<b>429,760,560</b>

Demand Component : \$ 499,329,280  
Energy Component : \$ 1,450,286,460  
Customer Component: \$ 231,775,008  
Direct Assignment : \$ 209,656,528

Fig. 5-3. Operating expenses allocation

**XYZ Gas Company**  
**Allocation of Operating Expenses**  
(In Dollars)

Acct. Description	total	interruptible
O & M Expenses	\$ 2,023,607,040	167,360,704
Depreciation Expenses	\$ 165,533,904	13,690,340
Taxes other than Income	\$ 36,562,140	3,022,245
Income Taxes	\$ 165,343,808	13,925,480
Adminis. & General Expns	\$ 183,564,608	15,243,670
<b>Total Operating Expenses</b>	<b>\$ 2,391,046,700</b>	<b>197,998,784</b>
Demand Component :	\$ 499,329,280	
Energy Component :	\$ 1,450,286,460	
Customer Component:	\$ 231,775,008	
Direct Assignment :	\$ 209,656,528	

Fig. 5-3. Operating expenses allocation--Continued

**XYZ Gas Company**  
**Allocation of Utility Plant in Service**  
(In Dollars)

Acct. Description	total	residential	commercial	industrial
Production Plant	\$ 168,989,504	88,941,824	31,129,640	34,094,368
Transmission Plant	\$ 649,386,110	330,017,500	140,534,800	117,989,400
Distribution Plant	\$ 1,880,737,020	952,392,000	581,329,470	202,419,904
General Plant	\$ 24,637,280	12,487,760	7,028,223	3,120,748
Intangible Plant	\$ 659,067	334,058	188,011	83,483
<b>Total Utility Plant in Service</b>	<b>\$ 2,556,426,000</b>	<b>1,295,761,020</b>	<b>729,265,980</b>	<b>323,816,700</b>

Demand Component : \$ 933,370,690  
Energy Component : \$ 223,026,096  
Customer Component: \$ 1,272,502,020  
Direct Assignment : \$ 127,527,104

Fig. 5-4. Utility plant in service allocation

**XYZ Gas Company**  
**Allocation of Utility Plant in Service**  
(In Dollars)

Acct. Description	total	interruptible
Production Plant	\$ 168,989,504	14,823,640
Transmission Plant	\$ 649,386,110	60,844,488
Distribution Plant	\$ 1,880,737,020	144,595,504
General Plant	\$ 24,637,280	2,000,552
Intangible Plant	\$ 659,067	53,516
<b>Total Utility Plant in Service</b>	<b>\$ 2,556,426,000</b>	<b>207,582,400</b>

Demand Component : \$ 933,370,690  
Energy Component : \$ 223,026,096  
Customer Component: \$ 1,272,502,020  
Direct Assignment : \$ 127,527,104

Fig. 5-4. Utility plant in service allocation--Continued

**XYZ Gas Company**  
**Allocation of Distribution Plant**  
(In Dollars)

Ac. No.	Ac. Name	total	residential	commercial	industrial
374	land and land rights	\$ 8,344,316	4,391,746	1,537,111	1,683,502
375	structures and improveme	\$ 563,763	296,717	103,851	113,742
376	mains	\$ 828,084,220	405,321,060	242,932,928	110,449,744
377	compressor station equip	\$ 226,864	109,371	71,507	27,157
378	measuring and reg sta eq	\$ 29,266,830	13,678,145	10,502,742	2,702,942
379	measuring and reg sta eq	\$ 0	0	0	0
380	services	\$ 715,815,810	334,543,650	256,878,800	66,109,252
381	meters	\$ 170,950,800	77,375,928	68,811,864	11,112,707
382	meter installations	\$ 0	0	0	0
383	house regulators	\$ 116,123,600	116,123,600	0	0
384	house regulator installa	\$ 0	0	0	0
385	industrial meas and reg	\$ 10,141,600	0	0	10,141,600
386	other property on custom	\$ 50,925	23,050	20,499	3,310
387	other equipment	\$ 1,168,232	528,766	470,242	75,941
<b>Total Distribution Plant</b>		<b>\$ 1,880,737,020</b>	<b>952,392,000</b>	<b>581,329,470</b>	<b>202,419,904</b>

Demand Component : \$ 572,057,410  
Energy Component : \$ 0  
Customer Component: \$ 1,182,413,950  
Direct Assignment : \$ 126,265,200

Fig. 5-5. Distribution plant allocation

**XYZ Gas Company**  
**Allocation of Distribution Plant**  
(In Dollars)

Ac. No.	Ac. Name	total	interruptible
374	land and land rights	\$ 8,344,316	731,958
375	structures and improve	\$ 563,763	49,453
376	mains	\$ 828,084,220	69,380,472
377	compressor station equip	\$ 226,864	18,829
378	measuring and reg sta eq	\$ 29,266,830	2,383,003
379	measuring and reg sta eq	\$ 0	0
380	services	\$ 715,815,810	58,284,104
381	meters	\$ 170,950,800	13,650,309
382	meter installations	\$ 0	0
383	house regulators	\$ 116,123,600	0
384	house regulator installa	\$ 0	0
385	industrial meas and reg	\$ 10,141,600	0
386	other property on custom	\$ 50,925	4,066
387	other equipment	\$ 1,168,232	93,283
<b>Total Distribution Plant</b>		<b>\$ 1,880,737,020</b>	<b>144,595,504</b>

Demand Component : \$ 572,057,410  
Energy Component : \$ 0  
Customer Component: \$ 1,182,413,950  
Direct Assignment : \$ 126,265,200

**Fig. 5-5. Distribution plant allocation--Continued**

**XYZ Gas Company**  
**Allocation of Distribution Expenses**  
(In Dollars)

Ac. No.	Ac. Name	total	residential	commercial	industrial
870	operation supervision an	\$ 8,984,073	4,515,251	2,351,120	1,417,100
871	distribution load dispat	\$ 628,547	312,935	148,911	106,164
872	compressor station labor	\$ 0	0	0	0
873	compressor station fuel	\$ 0	0	0	0
874	mains and services expen	\$ 1,733,293	742,911	485,964	190,495
875	meas and reg station exp	\$ 441,699	211,354	132,775	56,970
876	meas and reg sta expense	\$ 614,165	0	0	614,165
877	meas and reg sta expense	\$ 0	0	0	0
878	meter and house regulato	\$ 18,189,360	18,189,360	0	0
879	customer installations e	\$ 12,916,870	5,846,447	5,199,355	839,665
880	other expenses	\$ 22,622,740	10,239,527	9,106,204	1,470,598
881	rents	\$ 15,093	7,486	3,851	2,376
885	maintenance supervision	\$ 4,159,493	2,082,288	977,919	707,129
886	maint of structures and	\$ 4,093	2,060	955	700
887	maintenance of mains	\$ 13,405,660	6,550,187	3,712,834	1,927,118
888	maint of compressor stat	\$ 0	0	0	0
889	maint of meas and reg st	\$ 1,638,067	811,053	391,042	274,873
890	maint of meas and reg st	\$ 894,635	0	0	894,635
891	maint of meas and reg st	\$ 0	0	0	0
892	maintenance of services	\$ 7,741,284	3,803,719	2,130,031	1,121,358
893	maint of meters and hous	\$ 4,187,801	4,187,801	0	0
894	maintenance of other equ	\$ 338,339	134,689	66,468	44,239
<b>Total Distribution Expenses</b>		<b>\$ 98,274,208</b>	<b>57,637,060</b>	<b>24,707,430</b>	<b>9,667,585</b>

Demand Component : \$ 11,422,090  
Energy Component : \$ 13,826,830  
Customer Component: \$ 49,139,340  
Direct Assignment : \$ 23,885,960

Fig. 5-6. Distribution expenses allocation

**XYZ Gas Company**  
**Allocation of Distribution Expenses**  
(In Dollars)

Ac. No.	Ac. Name	total	interruptible
870	operation supervision an	\$ 8,984,073	700,602
871	distribution load dispat	\$ 628,547	60,538
872	compressor station labor	\$ 0	0
873	compressor station fuel	\$ 0	0
874	mains and services expen	\$ 1,733,293	140,593
875	meas and reg station exp	\$ 441,699	40,601
876	meas and reg sta expense	\$ 614,165	0
877	meas and reg sta expense	\$ 0	0
878	meter and house regulato	\$ 18,189,360	0
879	customer installations e	\$ 12,916,870	1,031,404
880	other expenses	\$ 22,622,740	1,806,411
881	rents	\$ 15,093	1,380
885	maintenance supervision	\$ 4,159,493	392,157
886	maint of structures and	\$ 4,093	378
887	maintenance of mains	\$ 13,405,660	1,215,522
888	maint of compressor stat	\$ 0	0
889	maint of meas and reg st	\$ 1,638,067	161,099
890	maint of meas and reg st	\$ 894,635	0
891	maint of meas and reg st	\$ 0	0
892	maintenance of services	\$ 7,741,284	686,177
893	maint of meters and hous	\$ 4,187,801	0
894	maintenance of other equ	\$ 338,339	25,275
<b>Total Distribution Expenses</b>		<b>\$ 98,274,208</b>	<b>6,262,135</b>

Demand Component : \$ 11,422,090  
Energy Component : \$ 13,826,830  
Customer Component: \$ 49,139,340  
Direct Assignment : \$ 23,885,960

**Fig. 5-6. Distribution expenses allocation--Continued**

APPENDIX A

SAMPLE INPUT DATABASE FILES

LISTING OF THE FILE CLASS.DBF

Record#	CUSTOM_ID	CLASS_NAME	CUSTOM_NUM	VOLUME	COINC_PEAK	NONCO_PEAK
1	1	residential	308363	193917	2300	2400
2	2	commercial	274233	78628	780	840
3	3	industrial	44287	74143	840	920
4	4	interruptible	54400	42000	0	400

LISTING OF THE FILE ACCTCATG.DBF

Record#	CAT_NO	CAT_TITLE
1	1	Natural Gas Production Plant
2	2	Products Extraction Plant
3	3	Manufactured Gas Production Plant
4	4	Underground Storage Plant
5	5	Other Storage Plant
6	6	Liq Nat Gas Term & Proc Plant
7	7	Transmission Plant
8	8	Distribution Plant
9	9	General Plant
10	10	Intangible Plant
11	11	CWIP Allowed in Ratebase
12	12	Depreciation Reserve
13	13	Working Capital
14	14	Adjustments to Ratebase
15	15	Gas Service Revenues
16	16	Other Operating Revenues
17	17	Natural Gas Production Expenses
18	18	Products Extraction Expenses
19	19	Exploration and Development Expenses
20	20	Other Gas Supply Expenses
21	21	Manufactured Gas Production Expenses
22	22	Underground Storage and Proc Expenses
23	23	Other Storage Expenses
24	24	Liq Nat Gas Term & Proc Expenses
25	25	Transmission Expenses
26	26	Distribution Expenses
27	27	Customer Accounts Expenses
28	28	Customer Serv & Info Expenses
29	29	Sales Expenses
30	30	Administrative & General Expenses
31	31	Deductions from Operating Income
32	32	Depreciation Expenses
33	33	Other Income
34	34	Other Expenses
35	35	Income Taxes
36	36	Property Taxes
37	37	Other Taxes
38	38	Miscellaneous Accounts

LISTING OF THE FILE ACCTDATA.DBF

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
1	1	325	land	0	demand(nco)
2	1	325	producing leaseholds	0	demand(nco)
3	1	325	gas rights	0	demand(nco)
4	1	325	rights-of-way	0	demand(nco)
5	1	325	other land and land rights	0	demand(nco)
6	1	326	gas well structures	0	demand(nco)
7	1	327	field compressor station structures	0	demand(nco)
8	1	328	field meas and reg station structures	0	demand(nco)
9	1	330	producing gas wells-well construction	0	demand(nco)
10	1	331	producing gas wells-well equipment	0	demand(nco)
11	1	332	field lines	0	demand(nco)
12	1	333	field compressor station equipment	0	demand(nco)
13	1	334	field meas and reg station equipment	0	demand(nco)
14	1	335	drilling and cleaning equipment	0	demand(nco)
15	1	336	purification equipment	0	demand(nco)
16	1	337	other equipment	0	demand(nco)
17	1	338	unsuccessful exploration & devel costs	0	demand(nco)
18	2	340	land and land rights	0	demand(nco)
19	2	341	structures and improvements	0	demand(nco)
20	2	342	extraction and refining equipment	0	demand(nco)
21	2	343	pipe lines	0	demand(nco)
22	2	344	extracted products storage equipment	0	demand(nco)
23	2	345	compressor equipment	0	demand(nco)
24	2	346	gas measuring and regulating equipment	0	demand(nco)
25	2	347	other equipment	0	demand(nco)
26	3	304	land and land rights	40773	demand(nco)
27	3	305	structures and improvements	367453	demand(nco)
28	3	311	liquified petroleum gas equipment	574338	demand(nco)
29	3	320	other equipment	24279	demand(nco)
30	4	350	land	4073552	demand(nco)
31	4	350	rights-of-way	541748	demand(nco)
32	4	351	structures and improvements	16797767	demand(nco)
33	4	352	wells	61089555	demand(nco)
34	4	352	storage leaseholds and rights	3892426	demand(nco)
35	4	352	reservoirs	12286	demand(nco)
36	4	352	non-recoverable natural gas	-178	demand(nco)
37	4	353	lines	18025313	demand(nco)
38	4	354	compressor station equipment	11850302	demand(nco)
39	4	355	measuring and regulating equipment	18864555	demand(nco)
40	4	356	purification equipment	9961510	demand(nco)
41	4	357	other equipment	780383	demand(nco)
42	5	360	land and land rights	1679569	demand(nco)
43	5	361	structures and improvements	2343708	demand(nco)
44	5	362	gas holders	14914194	demand(nco)
45	5	363	purification equipment	8923	demand(nco)

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
45	5	363	purification equipment	8923	demand(nco)
46	5	363	liquefaction equipment	18	demand(nco)
47	5	363	vaporizing equipment	0	demand(nco)
48	5	363	compressor equipment	1265694	demand(nco)
49	5	363	measuring and regulating equipment	169353	demand(nco)
50	5	363	other equipment	1711936	demand(nco)
51	6	364	land and land rights	0	demand(nco)
52	6	364	structures and improvements	0	demand(nco)
53	6	364	liquified nat gas proc term equipment	0	demand(nco)
54	6	364	liq nat gas transportation equipment	0	demand(nco)
55	6	364	measuring and regulating equipment	0	demand(nco)
56	6	364	compressor station equipment	0	demand(nco)
57	6	364	communications equipment	0	demand(nco)
58	6	364	other equipment	0	demand(nco)
59	7	365	land and land rights	1374035	demand(nco)
60	7	365	rights-of-way	16807815	demand(nco)
61	7	366	structures and improvements	16264385	mixed(0;1/0/45/55;nco)
62	7	367	mains, roads and trails	474445007	mixed(0;1/0/45/55;nco)
63	7	368	compressor station equipment	79352462	mixed(0;1/40/0/60;nco)
64	7	369	measuring and reg station equipment	51290119	mixed(0;1/70/0/30;nco)
65	7	370	communication equipment	0	customer
66	7	371	other equipment	9852310	customer
67	8	374	land and land rights	8344316	demand(nco)
68	8	375	structures and improvements	563763	demand(nco)
69	8	376	mains	828084183	mixed(0;1/50/0/50;nco)
70	8	377	compressor station equipment	226864	mixed(0;1/60/0/40;nco)
71	8	378	measuring and reg sta equip - general	29268826	mixed(0;1/80/0/20;nco)
72	8	379	measuring and reg sta equip - city gate	0	mixed(0;1/80/0/20;nco)
73	8	380	services	715815833	mixed(0;1/80/0/20;nco)
74	8	381	meters	170950846	customer
75	8	382	meter installations	0	customer
76	8	383	house regulators	116123548	direct(100;1)
77	8	384	house regulator installations	0	direct(100;1)
78	8	385	industrial meas and reg sta equipment	10141600	direct(100;3)
79	8	386	other property on customer's premises	50925	customer
80	8	387	other equipment	1168232	customer
81	9	389	land and land rights	371606	ptd
82	9	390	structures and improvements	6826567	ptd
83	9	391	office furniture and equipment	709318	ptd
84	9	392	transportation equipment	0	ptd
85	9	393	stores equipment	0	ptd
86	9	394	tools, shop and garage equipment	12947231	ptd
87	9	395	laboratory equipment	620492	ptd
88	9	396	power operated equipment	693981	ptd
89	9	397	communication equipment	0	ptd

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
89	9	397	communication equipment	0	ptd
90	9	398	miscellaneous equipment	1975229	ptd
91	9	399	other tangible property	1833	ptd
92	9	105	gas plant held for future use	491024	ptd
93	10	301	organization	0	ptd
94	10	302	franchises and consents	657148	ptd
95	10	303	miscellaneous intangible plant	1919	ptd
96	11	107	construction work in progress	174173417	ptd
97	12	108	depreciation - nat gas production plant	0	pplant
98	12	108	depreciation-products extraction plant	0	pplant
99	12	108	depreciation - manufactured gas plant	638323	pplant
100	12	108	depreciation - underground storage plant	48223545	pplant
101	12	108	depreciation - other storage plant	8232940	pplant
102	12	108	depreciation - LNG term and proc plant	0	pplant
103	12	108	depreciation - transmission plant	323991396	tplant
104	12	108	depreciation - distribution plant	834725691	dplant
105	12	108	depreciation - general plant	9191467	ptd
106	13		materials and supplies	305260324	ptd
107	13	165	prepayments under purchase agreements	49979767	energy
108	13	165	other prepayments	128193940	energy
109	14		CWIP adjustments	0	upis
110	14		working capital adjustments	0	upis
111	14		other adjustments to ratebase	0	upis
112	15	480	residential sales	901326041	direct(100;1)
113	15	481	commercial sales	435153634	direct(100;2)
114	15	482	industrial sales	299870658	direct(100;3)
115	15	483	sales for resale	88860723	direct(100;4)
116	15	484	other gas service revenues	632445494	mixed(10;4/0/60/30;sco)
117	16	485	intra-company transfers	0	energy
118	16	487	forefeited discounts	225770	energy
119	16	488	misc service revenues	-1093980	energy
120	16	489	revenue from trans of gas to others	73252494	energy
121	16	400	balancing accounts	119848841	energy
122	16	491	revenue from nat. gas proc. by others	0	energy
123	16	492	incidental gasoline and oil sales	0	energy
124	16	493	rent from gas property	685235	energy
125	16	494	interdepartmental rents	0	energy
126	16	495	other gas revenues	36002762	energy
127	16	496	provision for gas refunds	0	energy
128	17	750	operation supervision and engineering	0	energy
129	17	751	production maps and records	0	energy
130	17	752	gas wells expense	0	energy
131	17	753	field line expenses	0	energy
132	17	754	field compressor station expenses	0	energy
133	17	755	field compressor station and power	0	energy

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALDC_ID
133	17	755	field compressor station and power	0	energy
134	17	756	field meas and reg station expenses	0	energy
135	17	757	purification expenses	0	energy
136	17	758	gas well royalties	0	energy
137	17	759	other expenses	0	energy
138	17	760	rents	0	energy
139	17	761	maintenance supervision and engineering	0	mixed(0;1/0/30/70;nco)
140	17	762	maint of structures and improvements	0	mixed(0;1/0/30/70;nco)
141	17	763	maintenance of producing gas wells	0	mixed(0;1/0/30/70;nco)
142	17	764	maintenance of field lines	0	mixed(0;1/0/30/70;nco)
143	17	765	maint of field compressor sta equipment	0	mixed(0;1/0/30/70;nco)
144	17	766	maint of field meas and reg sta equip	0	mixed(0;1/0/30/70;nco)
145	17	767	maintenance of purification equipment	0	mixed(0;1/0/30/70;nco)
146	17	768	maint of drilling and cleaning equipment	0	mixed(0;1/0/30/70;nco)
147	17	769	maintenance of other equipment	0	mixed(0;1/0/30/70;nco)
148	18	770	operation supervision and engineering	0	energy
149	18	771	operation labor	0	energy
150	18	772	gas shrinkage	0	energy
151	18	773	fuel	0	energy
152	18	774	power	0	energy
153	18	775	materials	0	energy
154	18	776	operation supplies and expenses	0	energy
155	18	777	gas processed by others	0	energy
156	18	778	royalty on products extracted	0	energy
157	18	779	marketing expenses	0	customer
158	18	780	products purchased for resale	0	energy
159	18	781	variation in products inventory	0	energy
160	18	782	extracted products used by util - credit	0	energy
161	18	783	rents	0	pplant
162	18	784	maintenance supervision and engineering	0	mixed(0;1/0/30/70;nco)
163	18	785	maint of structures and improvements	0	mixed(0;1/0/30/70;nco)
164	18	786	maint of extraction and refining equip	0	mixed(0;1/0/30/70;nco)
165	18	787	maintenance of pipe lines	0	mixed(0;1/0/30/70;nco)
166	18	788	maint of extracted prod storage equip	0	mixed(0;1/0/30/70;nco)
167	18	789	maintenance of compressor equipment	0	mixed(0;1/0/30/70;nco)
168	18	790	maint of gas measuring and reg equipment	0	mixed(0;1/0/30/70;nco)
169	18	791	maintenance of other equipment	0	mixed(0;1/0/30/70;nco)
170	19	795	delay rentals	0	pplant
171	19	796	nonproductive well drilling	0	pplant
172	19	797	abandoned projects	0	pplant
173	19	798	other exploration expenses	40399090	pplant
174	20	800	natural gas well head purchases	197397197	mixed(0;1/0/80/20;sc0)
175	20	800	nat gas wellhead pur - intra co transfer	0	mixed(0;1/0/80/20;sc0)
176	20	801	natural gas field line purchases	224441567	mixed(0;1/0/50/50;sc0)
177	20	802	natural gas gasoline outlet purchases	17832	mixed(0;1/0/50/50;sc0)

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
177	20	802	natural gas gasoline outlet purchases	17832	mixed(0;1/0/50/50;sco)
178	20	803	natural gas transmission line purchases	973992288	mixed(0;1/0/80/20;sco)
179	20	804	natural gas city gate purchases	0	energy
180	20	804	liquified natural gas purchases	0	energy
181	20	805	other gas purchases	164	energy
182	20	805	purchased gas cost adjustments	0	energy
183	20	805	incremental gas cost adjustments	25	energy
184	20	806	exchange gas	-274159	energy
185	20	807	well expenses - purchased gas	14810	energy
186	20	807	operation of purchased gas meas stations	686350	energy
187	20	807	maint of purchased gas meas stations	0	energy
188	20	804	purchased gas calculation expenses	723995	energy
189	20	807	other purchased gas expenses	421043	energy
190	20	808	gas withdrawn from storage - debit	114073916	energy
191	20	808	gas delivered to storage - credit	-74929306	energy
192	20	809	withdrawals of liq nat gas for proc - dr	0	energy
193	20	809	deliveries of nat gas for proc - cr	0	energy
194	20	810	gas used for compressor sta fuel - cr	17394435	energy
195	20	811	gas used for products extraction	0	energy
196	20	812	gas used for other util operations - cr	-141722	energy
197	20	813	other gas supply expenses	264947	mixed(0;1/0/90/10;nco)
198	21	710	operation supervision and engineering	961	energy
199	21	728	liquified gas petroleum expenses	15	energy
200	21	733	gas mixing expenses	4814	energy
201	21	735	miscellaneous production expenses	25217	energy
202	21	736	rents	0	mixed(0;1/0/50/50;sco)
203	21	740	maintenance supervision and engineering	10498	mixed(0;1/0/40/60;sco)
204	21	741	maint of structures and improvements	0	mixed(0;1/40/60;sco)
205	21	742	maintenance of production equipment	242289	mixed(0;1/0/40/60;sco)
206	22	814	operation supervision and engineering	67498	mixed(0;1/0/80/20;sco)
207	22	815	maps and records	0	mixed(0;1/0/80/20;sco)
208	22	816	wells expenses	79886	mixed(0;1/0/80/20;sco)
209	22	817	lines expenses	13582	mixed(0;1/0/90/10;sco)
210	22	818	compressor station expenses	569395	energy
211	22	819	compressor station fuel and power	3086031	energy
212	22	820	measuring and reg station equipment	239400	mixed(0;1/0/50/50;nco)
213	22	821	purification expenses	3256	energy
214	22	822	exploration and development	0	plant
215	22	823	gas losses	166305	energy
216	22	824	other expenses	16163030	energy
217	22	825	storage well royalties	157294	energy
218	22	826	rents	0	mixed(0;1/0/40/60;sco)
219	22	830	maintenance supervision and engineering	36519	mixed(0;1/0/40/60;sco)
220	22	831	maint of structures and improvements	559259	mixed(0;1/0/60/40;sco)
221	22	832	maintenance of reservoirs and wells	144520	mixed(0;1/0/40/60;sco)

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
221	22	832	maintenance of reservoirs and wells	144520	mixed(0;1/0/40/60;scb)
222	22	833	maintenance of lines	65593	mixed(0;1/0/60/40;ncb)
223	22	834	maint of compressor station equipment	89325	mixed(0;1/0/40/60;ncb)
224	22	835	maint of meas and reg station equipment	-452798	mixed(0;1/0/50/50;ncb)
225	22	836	maintenance of purification equipment	301663	mixed(0;1/0/50/50;ncb)
226	22	837	other maintenance expenses	86500	mixed(0;1/0/50/50;scb)
227	23	840	operation supervision and engineering	15191	mixed(0;1/0/80/20;ncb)
228	23	841	operation labor and expenses	688270	mixed(0;1/0/80/20;ncb)
229	23	842	rents	0	mixed(0;1/0/60/40;scb)
230	23	842	fuel	1	energy
231	23	842	power	150288	energy
232	23	842	gas losses	0	energy
233	23	843	maintenance supervision and engineering	33525	mixed(0;1/0/40/60;scb)
234	23	843	maint of structures and improvements	358	mixed(0;1/0/40/60;scb)
235	23	843	maintenance of gas holders	177524	mixed(0;1/0/40/60;scb)
236	23	843	maintenance of purification equipment	0	mixed(0;1/0/40/60;ncb)
237	23	843	maintenance of liquification equipment	15	mixed(0;1/0/40/60;scb)
238	23	843	maintenance of vaporizing equipment	0	mixed(0;1/0/40/60;scb)
239	23	843	maintenance of compressor equipment	11895	mixed(0;1/0/50/50;ncb)
240	23	843	maint of meas and regulating equipment	0	mixed(0;1/0/50/50;ncb)
241	23	843	maintenance of other equipment	1512	mixed(0;1/0/50/50;ncb)
242	24	844	operation supervision and engineering	0	energy
243	24	844	liq nat gas proc term labor and expenses	0	energy
244	24	844	liquefaction proc labor and expenses	0	energy
245	24	844	liquefaction trans labor and expenses	0	energy
246	24	844	measuring and reg labor and expenses	0	energy
247	24	844	compressor station labor and expenses	0	energy
248	24	844	communication system expenses	0	mixed(0;1/0/80/20;scb)
249	24	844	system control and load dispatching	0	mixed(0;1/0/80/20;ncb)
250	24	845	fuel expenses	0	energy
251	24	845	power expenses	0	energy
252	24	845	rents	0	mixed(0;1/0/50/50;scb)
253	24	845	demurrage charges	0	energy
254	24	845	wharfage receipts - credit	0	energy
255	24	845	proc liq or vaporized gas by others	0	energy
256	24	846	gas losses	0	energy
257	24	846	other expenses	0	energy
258	25	850	operation supervision and engineering	3627900	energy
259	25	851	system control and load dispatching	3078858	energy
260	25	852	communication system expenses	0	energy
261	25	853	compressor station labor and expenses	4152558	mixed(0;1/0/60/40;ncb)
262	25	854	gas for compressor station fuel	17162637	energy
263	25	855	other fuel and power for compressor sta	294169	energy
264	25	856	mains expenses	1596146	mixed(0;1/0/70/30;ncb)
265	25	857	measuring and reg station expenses	2709836	mixed(0;1/0/80/20;ncb)

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	CAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
265	25	857	measuring and reg station expenses	2709836	mixed(0;1/0/80/20;nco)
266	25	858	trans and compression of gas by others	40099326	energy
267	25	859	other expenses	4901311	energy
268	25	860	rents	88407	mixed(0;1/0/50/50;nco)
269	25	861	maintenance supervision and engineering	1298872	mixed(0;1/0/40/60;nco)
270	25	862	maint of structures and improvements	94838	mixed(0;1/0/30/70;nco)
271	25	863	maintenance of mains	2229371	mixed(0;1/0/40/60;nco)
272	25	864	maint of compressor station equipment	6107327	mixed(0;1/0/40/60;nco)
273	25	865	maint of meas and reg station expenses	1133949	mixed(0;1/0/60/40;nco)
274	25	866	maintenance of communication equipment	0	mixed(0;1/0/60/40;scs)
275	25	867	maintenance of other	121886	mixed(0;1/0/50/50;nco)
276	26	870	operation supervision and engineering	8984073	mixed(0;1/30/50/20;scs)
277	26	871	distribution load dispatching	628547	mixed(0;1/20/50/30;nco)
278	26	872	compressor station labor and expenses	0	mixed(0;1/20/75/5;nco)
279	26	873	compressor station fuel and power	0	energy
280	26	874	mains and services expenses	1733293	mixed(0;1/50/30/10;nco)
281	26	875	meas and reg station expenses - general	441699	mixed(0;1/50/40/10;nco)
282	26	876	meas and reg sta expenses - industrial	614165	direct(100;3)
283	26	877	meas and reg sta expenses - city gate	0	customer
284	26	878	meter and house regulator expenses	18189359	direct(100;1)
285	26	879	customer installations expense	12916868	customer
286	26	880	other expenses	22622742	customer
287	26	881	rents	15093	mixed(0;1/30/30/40;nco)
288	26	885	maintenance supervision and engineering	4159493	mixed(0;1/20/40/40;nco)
289	26	886	maint of structures and improvements	4093	mixed(0;1/20/30/50;nco)
290	26	887	maintenance of mains	13405659	mixed(0;1/40/30/30;nco)
291	26	888	maint of compressor station equipment	0	mixed(0;1/20/40/40;scs)
292	26	889	maint of meas and reg sta equip - gen	1638067	mixed(0;1/20/60/20;nco)
293	26	890	maint of meas and reg sta equip - ind	894635	direct(100;3)
294	26	891	maint of meas and reg sta equip - city	0	customer
295	26	892	maintenance of services	7741284	mixed(0;1/40/20/40;nco)
296	26	893	maint of meters and house regulators	4187801	direct(100;1)
297	26	894	maintenance of other equipment	338339	mixed(0;1/20/30/30;nco)
298	27	901	supervision	3344056	customer
299	27	902	meter reading expenses	14950544	customer
300	27	903	customer records and collection expenses	43520299	customer
301	27	904	uncollectible accounts	3865760	customer
302	27	905	miscellaneous customer accounts expenses	7136439	customer
303	28	907	supervision	2022815	customer
304	28	908	customer assistance expenses	35069118	customer
305	28	909	information and instruction expenses	1726711	customer
306	28	910	misc customer service and info expenses	22567373	customer
307	29	911	supervision	326735	oprev
308	29	912	demonstration and selling expenses	1156244	oprev
309	29	913	advertising expenses	0	oprev

LISTING OF THE FILE ACCTDATA.DBF--CONTINUED

Record#	DAT_NO	ACCOUNT_NO	ACT_NAME	AMOUNT	ALOC_ID
309	29	913	advertising expenses	0	oprev
310	29	916	miscellaneous sales expenses	163621	oprev
311	30	920	administrative and general salaries	47237674	oprev
312	30	921	office supplies and expenses	20856963	oprev
313	30	922	aministrative expense transferred - cr	-11949151	oprev
314	30	923	outside service employed	5955622	oprev
315	30	924	property insurance	3041603	upis
316	30	925	injuries and damages	9719771	o&me
317	30	926	employee pensions and benefits	76479313	o&me
318	30	927	franchise requirements	16896679	upis
319	30	928	regulatory commission expense	53	oprev
320	30	929	duplicate charges	0	o&me
321	30	930	general advertising expenses	0	oprev
322	30	930	miscellaneous general expenses	7889967	oprev
323	30	931	rents	6097310	upis
324	30	935	maintenance of general plant	1338784	upis
325	31		deductions from operating income	2200074123	oprev
326	32	403	depreciation expenses	165533849	o&me
327	33	165	other income	127752385	oprev
328	33	165	other income deductions	0	oprev
329	34		other expenses	0	o&me
330	35		income taxes	165343832	oprev
331	36		property taxes	18889927	upis
332	37		other taxes	17672214	oprev
333	38	999	miscellaneous accounts	0	oprev

