IMPACT OF UTILITY RATES UPON CONSUMER

ATTITUDES TOWARDS THE ENERGY CRISIS

By

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Significance of Study

More than a decade has passed since the 1973 Arab oil
embargo, and yet, the issue of energy efficiency continues
to concern consumers and professionals alike. Although all
consumers are affected by the energy situation, residential
customers have perhaps received the hardest blow. Fuel costs
for residential customers have risen steadily since 1970,
when a 1000 kWh electricity bill was $22 (U.S. Department of
Agriculture, 1984). By 1980, that bill had risen almost two
and one-half times to $53. Even a sharper increase in oil
costs was experienced. An average oil bill (250 gal) cost
approximately $46 in 1970, but ten years later, it exceeded
$244.

Families can attempt to cope with increasing energy
costs by reducing the amount of fuel or electricity that
they use. Conservation techniques can take one of two forms.
The least costly form involves making changes in lifestyles,
such as lowering the thermostat in winter and closing unused
rooms. Behavior changes are less effective than the second
form of conservation techniques, structural modifications,
in limiting energy use in a home. Households can reduce

1

energy consumption by making capital investments to improve the structural efficiency of their homes, thus making their homes more economical to heat and cool. Structural modifications require intensive investment of both time and money, but homeowners can realize substantial savings on utility bills if proper changes are made. In addition to personal savings, such investments in energy efficiency could reduce the national demand by thirty percent near the end of the twentieth century (Norman, 1981).

The type of conservation behavior selected and, subsequently, the amount of energy consumed depends upon a variety of factors. These underlying causes of energy use have intrigued economists, planners, sociologists, behaviorists, and housing professionals even as early as 1975, when the Ford Foundation sponsored one of the cornerstone studies of residential energy use (Newman and Day, 1975). Since then, researchers have identified many components of energy use, including structural, behavioral, attitudinal, demographic, and socio-economic.

One of the most crucial factors of energy use is the structure itself. Characteristics such as age, size, degree of insulation, and other weatherproofing improvements exert constraints on the level of energy use within the home (Hittman Associates, 1977; Newman and Day, 1975; Burby and Marsden, 1980; and Klausner, 1978). Total usage is also influenced by attitudes, choices, and behaviors of the occupants. Energy consumption in identical homes can vary from

two to three times, depending solely on the attitudes and behaviors (Seligman et al., 1978; Harrje, 1978; Weber and Strebe, 1983). Social scientists also explored demographic and socio-economic factors associated with energy including age of householder, annual income, and family size (Newman and Day, 1975; Gottlieb and Matre, 1976; Cunningham and Lopreato, 1977). One of the most significant socio-economic characteristic that impacts energy use is income (Schwartz and Schwartz, 1974; Morrison and Gladhart, 1976; Welfare Research, 1978).

If families and individuals perceive energy conservation as important, they may willingly modify behavior or make other changes that can potentially reduce energy use and save considerable amount of money. However, a crucial factor that determines what type of modification is chosen or whether any changes will be made is the amount of money that is available for costly changes (White and Rudakov, 1979). In other words, households must be economically able to make capital investments for energy modifications.

There are unique characteristics of the South that also impact household energy use. Many southern families and individuals must deal not only with rising energy costs as do other Americans, but they face escalating utility bills in homes that are structurally inferior to homes of other regions, with incomes that fall below the national poverty level, and at ages where income is limited or non-existent. These and other considerations complicate the energy problem

of southern families.

Statement of Problem

Social scientists have studied the phenomenon surrounding the energy situation for many years. Numerous studies have attempted to understand why households accept or reject lifestyle changes that can reduce energy use, or why they choose not to invest in energy-saving features (Burby and Marsden, 1980). In order to explain variations in energy use and behavior, other researchers have focussed upon homeowners' attitudes toward the energy problem in America. One factor that may potential impact development of attitudes or acceptance of conservation changes, or determine a basic level of energy use is the cost of electricity and natural gas in an area. Although numerous economic studies report the "economic" relationship between price and energy use, sociological researchers have neglected to study the potential role of energy prices on energy-related attitudes and use. Therefore, the interaction among prices, attitudes and use deserves closer attention (Schipper and Ketoff, 1981).

Purpose and Objectives

There are many questions that surround energy consumption in households, especially when one considers electricity and natural gas prices of a particular area. This study raised several relevant questions:

o Are some households forced into using less energy due to high utility bills or structured rate schedules ?

o Do households in areas with high utility bills express greater belief in the energy crisis than those in areas with lower utility bill ?

o Do high income households live in areas with lower bills than lower income families ?

o Do families that spend a lot of their income on energy live in areas with high utility prices, or low rates ?

This study attempted to answer such questions. Specifically, the following objectives were established:

1. To develop and validate a computer procedure to calculate mean utility bills and rates for electricity and natural gas;

2. To compare self-reported monthly use in million Btu (MBtu) with average utility rates per million Btu for each energy source and assess the impact of rates upon estimated monthly usage;

3. To assess the impact of average utility rates per MBtu upon expressed energy concern;

4. To determine whether a linear relationship exists between annual household income and average costs per MBtu of electricity and natural gas; and

5. To determine whether a linear relationship exists between average electricity and natural gas costs per MBtu and percentage of monthly income devoted to energy bills.

The present study is necessary for several reasons.
First, researchers cannot compare energy use between areas
without considering cost of the energy sources available in
the communities. Actual behaviors of the subjects may be
affected by the "closeness" (salience) of the crisis to a
household's pocketbook, as measured by the monthly utilty
bill. Second, proponents of the recent deregulation of
natural gas claim that natural market forces will reduce
energy consumption as a result of the higher prices (Dill-
man et al., 1981). This assumption is based upon the theory
of elasticity: As price increases, consumption decreases.
The average household may be able to control energy use, but
when households are faced with energy bills that consume a
disproportionately high share of their income, they may not
be able to lower consumption.

Third, knowledge of the impact of prices upon energy
consumption and conservation may help economists analyze
aggregate energy demand. To successfully forecast future
energy demand economists must evaluate complex relations
among economic, technical, and natural forces. Any informa-
tion that increases their ability to predict behaviors would
improve this process. Fourth, utility companies may benefit
from this research by understanding how their pricing and/or
rate structure influences the customer's ability to lower
energy use. Since utility companies rely upon future con-
sumption estimates to plan new energy facilities, they must
understand the impact of various pricing schemes on low-

and middle-income families. Fifth, housing professionals
may find these results useful as well. Changes in energy
policy should be measured in terms of the impact upon all
households. They must understand what restricts or facili-
tates consumption/conservation decisions, including prices.

Limitations

As with any research study, this work was conducted
under certain restrictions and limitations. These factors
affect the researcher's ability to generalize conclusions
and apply them to other populations or situations. For
example, the data base used in this study was compiled from
results of a southern regional survey conducted in 1981.
Although care was taken to uniformly collect and code the
data, errors may have occurred and may influence the validi-
ty of the results.

Another factor that affects data quality concerns self-
reported information. Studies indicate that these responses
may reflect incorrect or biased information. The validity
of self-reported monthly utility bills is particularly cru-
cial to this study. Actual utility usage was not available
by household, so estimated monthly bills were converted into
monthly use as a component of this study. In addition, the
behaviors reported by the sample may not represent actual
behaviors. Another consideration of self-reported informa-
tion in this study concerns annual household income. Since
householders may not have provided income information or

understated take home pay, the annual household income used throughout the analysis may not represent actual income of all members.

It was also not possible to determine what company sold electricity or natural gas to a particular respondent. For this reason, an average was calculated for each county that included all utility rates from companies in the area. By doing so, extreme rate differences between companies could be negated. This average rate may actually overestimate some company rates and underestimate other rates. To calculate average rates, the present study relied upon schedules from utility companies offering residential services in each county. Since collection of these data depended upon assistance from several agencies, some electric and natural gas providers may have inadvertently been omitted from the study.

Assumptions

In preparation for this study, the researcher made the following assumptions. It was assumed that responses of participating families indicated their income, opinions, and behaviors as truthfully and as accurately as possible. In addition, the researcher assumed that the survey sample was representative of rural Southern households.

Definition of Terms

To assure one accurately understands and interprets this study, it was necessary to define the following terms:

Block tariff: A method of determining the unit price to assess customers for each block of usage. Each block has a set price per unit but when a consumer moves to a higher usage block, the customer pays the unit cost for the first block, then a higher or lower unit cost for additional energy.

British Thermal Unit (Btu): The standard unit used in measuring heat content of fuel. It is the amount of heat needed to raise the temperature of 1 pound of water 1 F. One Btu is about equivalent to the heat given off by a blue tip match.

Cubic foot (cu. ft.): The quantity of natural gas is measured by its volume, hence in cubic feet. For conversion purposes, 1 cu. ft. equals 1,027 Btu.

Degressive rate: General classification of rate structure that assesses a lower unit price for increased level of consumption.

Elasticity: An economic theory that consumers will buy less of a product when prices rise.

Energy demand: The rate at which energy is delivered, or the amount of energy that consumers are willing to buy at a given price.

Fuel adjustment charge: A fee, called a "passthrough," added to a customer's electric bill to compensate the company for increased cost of purchasing energy (i.e., coal, gas, oil, or nuclear fuel) from wholesale suppliers to generate electricity.

Kilowatt-hour (kWh): Electricity consumption is measured
by the kilowatt-hour, which is the amount of energy
delivered by an hour-long flow of 1 kW of electric
power. Electric bills are based upon the number of kWh
used For conversion, 1 kWh is equivalent to 3,412 Btu.

Progressive rates: General classification of rate struc-
ture that assesses higher unit cost for increased level
of use.

Proportional rates: General classification of rate struc-
ture that assesses the same unit cost, regardless of
level of consumption.

Purchased gas adjustment charge (PGA): A fuel cost
adjustment charge appearing on a natural gas bill. It
compensates the gas company for increased cost of
natural gas bought for its customers.

Rate Period: Length of time that a rate schedule is in
effect. There may be multiple rate periods in one year.

Step tariff: A method of determining the unit price to
assess customers for each block of usage. Each block
has a set price and consumption within that block costs
the specified unit price. When consumption moves to a
higher block of use, the customer is charged the unit
price of the highest block for all energy used.

Utility rate schedule: A utility's approved schedule of
charges for billing utility services rendered to dif-
ferent classes of customers. It determines the cost of
each kWh, gallon, or cubic foot of energy used.

These definitions were taken or modified from publications in the areas of housing, economics, and energy following an extensive review of current literature.

Summary

For more than a decade, researchers have been puzzled by what causes identical households to use drastically different amounts of energy. From a technological standpoint, today's housing stock is far superior in terms of energy efficiency than it has ever been in the past. From a sociological viewpoint, today's consumers have access to more information on energy conservation than their forefathers ever did. However, households continue to resist conservation changes or find themselves forced into involuntary conservation. Researchers have identified numerous factors that impact energy use, but even with the knowledge of all of these factors, approximately one-half of the variation in energy use remains unexplained. Although there is significant evidence in current literature of the direct "economic" relationship between energy use and price little is known about the sociological impact of high prices on development of positive energy attitudes and conservation behaviors. This study analyzed variations in energy-related attitudes among rural southern households to determine whether these attitudes are dependent upon differences in energy prices between areas.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Energy consumption has grown in importance to consu-
mers, utility companies and policymakers since the Arab oil
embargo and subsequent events such as the 1976-77 natural
gas shortages and recent deregulation of natural gas. Con-
sumers continue to face rising electricity and natural gas
bills, while being told to do their part to reduce the
nation's dependence upon foreign energy supplies. Utility
companies report problems between the amount of energy that
consumers demand and their ability to economically produce
the supplies, then cite how these problems are compounded by
government regulations and operating expenses. Policymakers
are forced to make decisions that benefit not only consumers
and producers, but will meet stringent environmental and
societal requirements.

This chapter provides a brief overview of the current
energy situation and highlights relevant energy research
conducted since the early 1970's. It places particular em-
phasis upon social aspects of energy such as the impact of
behavior and attitudes upon total consumption. The unique

characteristics of southern households are also covered.

Overview of Energy Situation

Even though the "crisis" seems less severe than in the 1970's, realities of dwindling fuel supplies, skyrocketing utility bills, and rising energy demand make the impact of energy upon all people as important today as at the outset. The energy situation does not capture the headlines as often as it did in the seventies, but experts continue to maintain that America must control its appetite for nonrenewable energy supplies such as oil, coal, and natural gas. In 1982, Americans consumed more than 70 quadrillion Btu (quads) of energy, including natural gas, oil, coal, and petroleum (U.S. Department of Energy, 198 . More than 20 percent of that figure, or 14.7 quads, goes to heat, cool, and light the nation's 83.8 million homes.

Table I illustrates residential energy consumption levels from 1960 to 1982. As the figures show, energy use increased steadily at the annual rate of four percent until 1972 (Burby and Marsden, 1980). In 1973, consumption decreased slightly, perhaps since households felt the initial impact of the embargo by the abrupt increase in prices. Unfortunately, this decline in energy use was short-lived and was met by an equally spontaneous upsurge in use from 1974 until 1978. It was in this year that the energy diet of the nation's homes reached an all-time high of 15.6 quads of energy. The American public was accustomed to cheap, abun-

TABLE I

RESIDENTIAL ENERGY USE FROM 1960 TO 1982

Year	Use (in Quads)
1960	8,286
1965	10,126
1966	10,666
1967	11,151
1968	11,872
1969	12,726
1970	13,349
1971	13,880
1972	14,527
1973	14,625
1974.	14,369
1975	14,457
1976	15,006
1977	15,212
1978	15,621
1979	15,199
1980	15,080
1981	14,621
1982	14,742

Source: U.S. Department of Energy. State Energy Data Report:
Consumption Estimates, 1960-1982. Energy Informa-
tion Administration. Washington, D.C.: Government
Printing Office, 1984.

dant supplies of fuel, and many citizens doubted the authen-
ticity of the crisis. However, it became evident that the
dilemna would not disappear as swiftly as it "seemed" to
materialized.

In the winter of 1976, the energy crisis was felt by
many households when the nation experienced a severe shor-
tage of natural gas, coupled with record-breaking snow fall
and freezing temperatures. This shortage touched the lives
and pocketbooks of many citizens, and shook Americans into
the realization that energy was no longer a cheap, abundant
resource. Shortly after this "crush" in 1977, President
Carter introduced the National Energy Plan (Executive Office
of the President, 1977) to emphasize government's concern
over the severity of the energy situation. The cornerstone
of the plan was voluntary conservation, which, according to
the U.S. General Accounting Office (1977), was essential to
achieving national energy goals. The Executive Office of
the President (1977) estimated that Americans wasted half
the energy used in the residential sector. They attributed
this excessive loss to the type and quality of the nation's
housing. Reports from Oak Ridge National Laboratories
(Hirst and Carney, 1978) suggest that the rate of residen-
tial energy use can be slowed to 1.2 percent per year by
taking advantages of opportunities to conserve energy.

Factors Associated with Energy Use

Since the first call to energy conservation in the

seventies, numerous studies have added to our knowledge of what causes families to use varying amounts of energy. Figure 1 indicates several factors which have been shown to impact energy use. This section discusses these factors in order to provide a basis for understanding the relationship between rates and energy consumption/conservation. Among these factors are structural features, behaviors, attitudes, demographics, and socio-economic considerations.

Structural Features

One major factor that determines basic level of energy use is the structural quality of housing units. Early research indicates that the physical structure accounts for a larger proportion of the variance in energy use than does the behavior of residents (Burby and Marsden, 1980). Newman and Day (1975) also stress that, although residents may have limited immediate control over features in existing buildings, these features contribute significantly more to energy use than does consumer behavior.

Studies have shown that homeowners can achieve significant savings in utility bills by tightening energy inefficient houses. The Environmental Protection Agency (1975) indicates that approximately 20 percent of the total energy consumed in the 18 million older homes lacking insulation could be saved by improving the thermal envelope of the home (i.e., adding insulation, caulking and weatherstripping, and installing storm doors and windows). Such simple modifica-
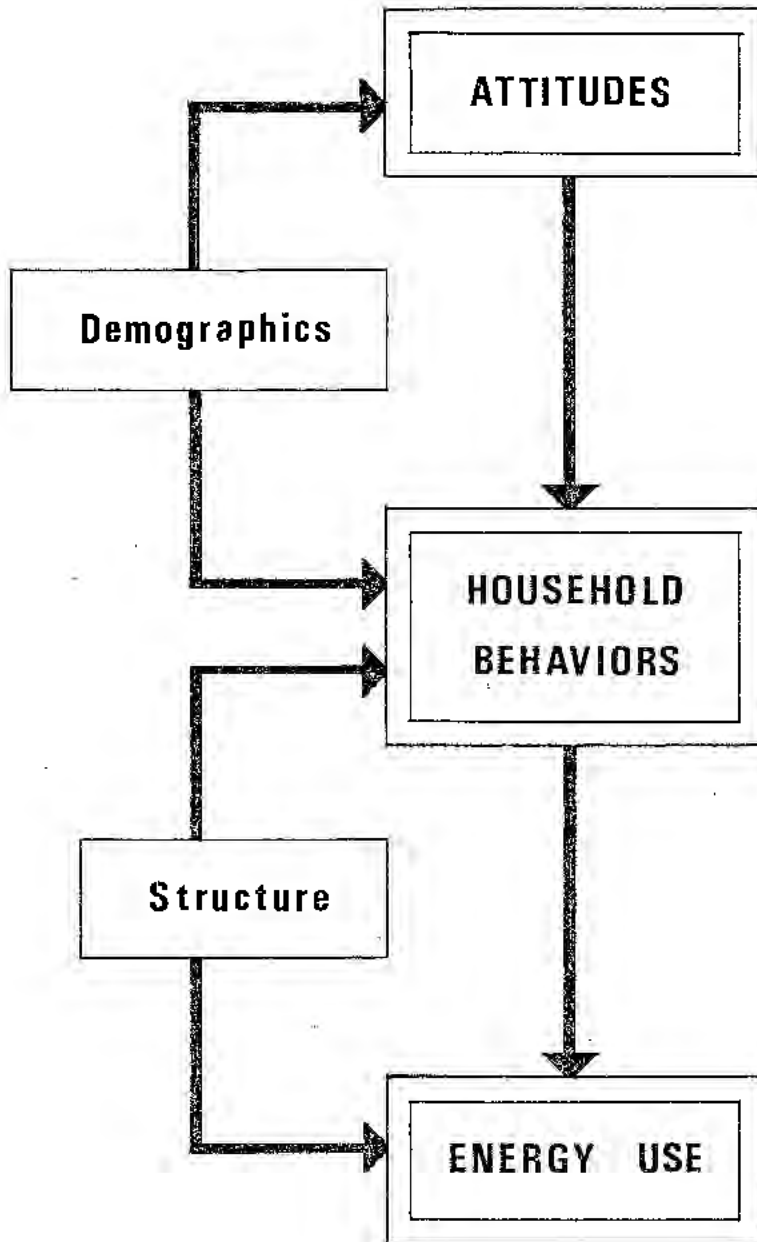
Figure 1. Factors Influencing Energy Use

tions to existing structures could reduce current heating bills by 20 to 30 percent (Harrje, 1978), and could save 30 to 40 percent of total heating and cooling energy. A report by the National Association of Home Builders (1979) also indicates the potential savings in space heating that consumers can realize by changing housing structure as well as household lifestyles.

Much of the structural inefficiency of America's housing stock is a function of the age of the unit. More than 76 percent of today's single family homes were built before the 1973 energy crisis, when little attention was paid to energy efficient design (Thompson, 1984). Older homes tend to lack energy characteristics such as insulation and storm doors and windows. For example, nearly one-third of the 23.6 million homes built before 1940 lack storm windows and doors (Table II). While more than 90 percent of all single family units built before 1970 have some roof insulation, roughly 20 percent lack either floor or wall insulation (Table III). As the age of the house increases, few energy-saving features are found. More than 40 percent of the 16 million single family homes built pre-1940 lack floor insulation.

Studies have also shown that other features of a structure can strongly affect level of energy consumed. Housing type (single family, townhouse, or apartment), size of the house, presence of a fireplace, and condition and type of heating unit are examples of such features (Hittman Associ-

TABLE   II

THERMAL CHARACTERISTICS OF ALL
HOUSING UNITS BY YEAR BUILT

CHARACTERISTIC	YEAR BUILT		
	PRE-1940	PRE-1960	PRE-1970
	(N=23.6) *	(N=44.0) *	(N=60.7) *
No Storm Windows	34.0% **	38.0%	41.4%
No Storm Doors	34.4%	34.5%	36.1%

 * Values represent million units and include all units
   built prior to the year in question.

** Percentages are calculated from the total number of units
   built prior to the year in question.

Source: Thompson, W. Residential Energy Consumption Survey:
        Housing Characteristics, 1982. U.S. Department of
        Energy, Energy Information Administration. Washing-
        ton, D.C.: Government Printing Office, 1984.

TABLE III

THERMAL CHARACTERISTICS OF SINGLE FAMILY
HOUSING UNITS BY YEAR BUILT

CHARACTERISTIC	YEAR BUILT		
	PRE-1940	PRE-1960	PRE-1970
	(N=16.1) *	(N=33.1)	(N=44.3)
No Roof Insulation	28.1% **	14.8%	11.9%
No Wall Insulation	38.0%	23.6%	19.9%
No Floor Insulation	40.4%	25.9%	21.7%
No Characteristics	15.9%	10.2%	8.9%

* Values represent million units and include all units
 built prior to the year in question.

** Percentages are calculated from the total number of units
 built prior to the year in question (i.e., 28.1% of the
 16.1 million households built before 1940 have no roof
 insulation).

Source: Thompson, W. Residential Energy Consumption Survey:
 Housing Characteristics, 1982. U.S. Department of
 Energy, Energy Information Administration. Washing-
 ton, D.C.: Government Printing Office, 1984.

ates, 1978; McDougal et al., 1981; Verjhallen and van Raaij, 1981).

Attitudes and Behaviors

While condition of the dwelling determines basic level of energy use for heating, household behaviors also make a difference. Seligman et al. (1978) stress the influence that daily family activities have upon energy use. They note that such lifestyle habits may account for a doubling of energy expenditures between identical homes. Consumers can achieve energy savings of 15 to 40 percent by changing how they use heating and cooling equipment as well as appliances (Sizemore, 1978).

During preliminary analysis of an International Energy Data Base, Shipper and Kethoff (1981) noted enormous variation in energy use per family for a given end use, a difference too large to be explained by technology alone. They stressed that connections between lifestyles and energy must be quantified and stated, "It appears that behavior -- the way people use hot water, their preference for frozen foods rather than fresh foods -- plays a key role." (Shipper and Kethoff, 1981).

Weber and Strebe (1983) also reported surprising variations in energy use between structurally energy efficient and energy inefficient homes. Single family units that recorded low heating and cooling loads consumed more energy than homes with higher energy loads, attributed in large

part to habits of the residents. This study supports the argument that behavior of occupants can significantly alter energy use.

Since behavior plays such an important role in energy consumption, researchers have attempted to understand the causes of behavior change related to energy use. An important question has been, "What affects adoption of energy saving behavior ?" Several studies report that economic disincentives, pro-conservation attitudes, energy conservation knowledge, and demographic correlates determine energy conserving behavior (Kilkeary, 1975; Gottleib and Matre, 1976).

The concept of conservation-oriented (C-O) consumer was studied by Allen, Schewe, and Liander (1981). C-O consumer "perceives the energy problem as real and serious, believes his/her own behavior is linked to the problem" (Allen et al., 1981). These researchers compared individual attitudes and values of Americans and Swedes to determine if these factors explain the substantially lower Swedish energy consumption. Americans, unlike the energy-thrifty Swedes, viewed their own behavior as effective in reducing energy use of the nation. Nearly two-thirds of the American sample altered consumption habits in response to the energy predicament, while less than one-fourth of the Swedish sample made similar changes. These results indicate a discrepancy between energy-saving attitudes and actual use. They suggest that pro-conservation attitudes do not singularly

explain energy-saving behavior.

Demographic and Socio-Economic Characteristics

A number of familial characteristics affect household attitudes and behaviors, which in turn impact the amount of energy a home consumes. An obvious factor is family size, but other positive indicators of energy use include age of the householder, education of the head, and income level of the household (Newman and Day, 1975). Murray (1974) found that the age of the householder influences adoption of energy conservation practices, as well as the type of practices adopted. In general, younger families are more willing to make changes in the structure, while senior citizens select less costly behavior modifications to reduce total use. Weber et al. (1984) noted a positive relationship between education level and willingness to consider energy efficient homes. These results suggest that households with substantially higher education possess more positive attitudes towards energy conservation than less educated families.

Probably the most significant socio-economic factor to affect energy use is the flow of money into the household, because it is the major way to acquire many other resources (Perlman and Warren, 1977). Newman and Day state

> The more money you have, the more energy you use at home....This is regardless of any other condition -- climate; ... the size of your home; your age; number of people in your household; and whether or not your home is protected from weather by insulation, for instance. (Newman and Day, 1975).

Marsden and McKinney (1980) suggest that energy conservation behavior is a function of conservation knowledge and attitudes, and the economic disincentives associated with rising energy prices, all of which are related to household income. They view household income "as an indicator of lifestyle, of the number of appliances and other energy-consuming goods, of the size of the dwelling, of the level of information about energy conservation techniques and the belief in the need to conserve energy" (Marsden and McKinney, 1980).

There are several factors that make energy requirements of upper income households far greater that those of poor or moderate income families (Perlman and Warren, 1977). Higher income families generally reside in larger dwellings. The median size of dwellings for upper income households is 7.0 rooms, compared to 4.1 rooms for poorer households (Newman and Day, 1975). Perlman and Warren (1977) have labeled this need for energy expressed by more affluent households as "energy thirst." In light of dwindling energy supplies, this phrase expresses an unsatisfied "thirst" for energy to maintain lifestyles established well before the crisis. Newman and Day (1975) point out that needs of these more affluent families are not flexible or elastic; their larger homes demand a higher level of energy that would be difficult to reduce in the short run. These families, ironically, felt that they experienced the most burden at the begin-

Just as upper income families were affected by the energy crisis, lower income households experienced problems as well. Although low-income families use significantly less energy than the average household and spend less money on their energy bills, utility costs consume a disproportionately large share of their monthly pay (Table IV). As income decreases, the financial outlays for energy bills account for more than ten percent of household income. Families earning less than $5000 per year spend on the average 6.5 percent more on energy than other families. They bear a large burden of the energy costs, although this segment of our population can least afford excessive expenditures.

TABLE IV

RELATIONSHIP BETWEEN INCOME AND ENERGY COSTS

Yearly Income	Average Monthly Income	Average Monthly Energy Bill	Percent of Income
Under $5,000	$417	$44	10.5%
$5,000-25,000	$1250	$60	4.8%
Over $25,000 *	$2083	$78	3.7%

** Based on an income of $25,000. Higher yearly income would allow greater amount of disposable income.

Perlman and Warren (1977) suggest that households with considerable discretionary income are better able to adjust energy use. Verhallen and van Raaij (1981) confer that families on limited incomes cannot reduce their demand for energy. They also state that consumers may have positive energy attitudes but are unable or unwilling to change their behavior.

Structural Efficiency and Household Characteristics

Separately, these demographic and socio-economic facts shed considerable light on the ability of American households to face rising fuel costs. However, when combined with structural inefficiency of older homes, the following statistics arise (Thompson, 1984).

1. Almost two-thirds of the 23.2 million households with incomes under $10,000 live in homes built before 1960.
2. Sixty-three percent of the householders over 60 live in homes older than 25 years.
3. More than 37 percent of single member households reside in homes more than 40 years old.
4. Eight out of ten black households in this nation live in homes built before the nation became concerned with energy conservation.

These facts reinforce the findings that the most likely

candidates for energy conservation are households that find
it difficult to pay their rising fuel bills. Unfortunately,
many are forced into a "catch twenty-two" situation: In or-
der to increase disposable income to purchase energy-saving
features, they need to lower energy costs. However, they
are not financially able from the start to pay for expensive
energy features. In this case, they may turn to less cost-
ly, and less cost-effective lifestyle modifications.

Explained Variance in Energy Use

In a study by Verhallen and van Raaij (1981), these
factors of energy use were analyzed. Although household be-
haviors and home characteristics explained nearly 50 percent
of the variance in energy use, the researchers state that
they could explain only 20 percent of the differences be-
tween behaviors. Why did some families choose to make
changes, while other families who shared similar situations
choose not to change their homes or their lifestyles ?
Studies suggest a wide range of reasons for the failure of
some families to take conservation actions. These include
(1) lack of social pressure or reinforcement, (2) disparity
in effects of the energy problem, as well as opportunities
to conserve energy, among different income groups, (3) con-
flicts between conservation objective and other goals such
as comfort, convenience, and "fairness", (4) distrust of in-
formation providers and disbelief that shortages are real,
(5) lack of practical knowledge about how to conserve, and

future energy supply problems (Cunnigham and Lopreato, 1977;
Milstein, 1976; and Gallup Organization, 1978). The ques-
tion raised by this study is whether energy price variations
significantly affects development of consumer attitudes and,
subsequently, behavior towards energy conservation.

Price

A vital link frequently omitted from social science re-
search on factors affecting energy consumption is price.
Table V compares changes in consumer price index (CPI) for
energy with other items included in the CPI. While general
prices have doubled, the price of energy has risen almost
three-fold since 1967. The largest increase, more than 80
points, occurred between 1979 and 1980 (not shown in table).

TABLE V

CONSUMER PRICE INDICES FOR 1970 TO 1980 *

Year	Energy	All Other Items
1970	107.0	117.0
1972	114.3	126.1
1974	159.7	146.9
1976	189.3	169.2
1978	220.4	193.8
1980	361.1	238.0

* Based upon 1967 CPI = 100
Source: Economic Report of the President,
        February 1982, Table B-54, p.294.

However, degree of increase varied between the type of energy purchased. Since 1970, the cost of a single kWh of electricity more than tripled, while natural gas costs rose nearly six-fold (Table VI). Heating oil prices per gallon increased from $.19 in 1970 to $1.19 in 1982.

TABLE VI

RESIDENTIAL ENERGY COSTS FROM 1970 TO 1983

Year	Electricity (cents/kWh)	Natural Gas (cents/gal)	Heating Oil (cents/gal)
1970	2.22	1.09	18.5
1973	2.54	1.29	22.8
1975	3.51	1.71	37.7
1978	4.31	2.56	49.4
1980	5.36	3.68	97.8
1982	6.86	5.17	118.5
1983	7.18	5.99	N.A.*

* Data base changed so data is not comparable. Heating oil costs in 1983 increased slightly over 1982.

Source: U.S. Department of Agriculture. Energy and Environment Fact Sheet. Washington, D.C.: The Department, 1984, April.

In studies conducted shortly after the energy shortages of 1973 and 1976-77, the high cost of energy was cited more often than any other reason for reducing home heating temperatures (Perlman and Warren, 1977). Another study conduc-

ted by Shipper and Kethoff (1981) reveals that prices are an important determinant of energy use and intensity of use. In countries with low electric rates, researchers found high appliance electricity use. Conversely, low levels of use were documented in countries with high electric prices.

The reaction of consumers in both studies parallels the theory of supply and demand, which recognizes the economic relationship between price and consumption. Energy is an elastic commodity, implying that consumers reduce energy use when price rises. Decisions of the Reagan administration to deregulate the utility industry encourage natural market forces to influence energy use (Dillman et al., 1981). Proponents of these policies base much of their support upon theories regarding price-related behavior, and assume that increased prices will discourage high energy consumption.

Decontrol policies assume that energy conservation in the home will occur, but as a by-product of higher prices that dampen consumption. Most federal, state and local government programs have shifted towards voluteerism in conservation, leaving the conservation decision to individual households (Dillman et al., 1981). Such resource decisions are more influenced by individual, family, and community norms, quality of life aspirations, and personal whims than by careful examination of economic costs and benefits (Dillman et al., 1981). Studies indicate that unless consumers are inclined toward conservation, few efforts will likely occur.

While higher prices may be a significant cause for the lowered energy use in recent years, they serve as a potential detriment to some citizens. For many households, energy becomes an inelastic commodity, implying that consumption decreases only slightly when price rises. Such households maintain high levels of use because they have trimmed away the "excess." Their energy expenditures are limited to simple necessities such as lighting, cooking, and heating. Perlman and Warren urge,

> If energy policy is to be equitable as well as effective, the attractiveness of allowing prices to rise 'with the market' must be tempered by the awareness of the disproportionate burden that higher energy prices place on the poor." (Perlman and Warren, 1977).

Since little is known about the impact of high prices on development of energy attitudes and behaviors (Williams et al., 1979), research must be conducted to determine the relationship between these costs and attitudes and subsequent consumption/conservation behaviors of households.

Rural Southern Perspective

Until this point, discussion of the energy situation has been "generic" in nature; it has not been limited to a specific region or state. In the past, many studies were conducted as if the United States were a homogeneous nation, with respect to energy conservation efforts. However, researchers have recently acknowledged substantial differences

and unique characteristics that may exist between regions and states. The present study focussed upon four states in the southern region of the United States, Arkansas, Florida, Oklahoma, and Virginia.

There are several crucial factors that set this region apart from the nation that may directly impact energy consumption or conservation in rural households. First, there are general characteristics that may influence this situation. The South claims 33.5 percent of the nation's 83.8 million households, the highest percentage of the four regions (Thompson, 1984). Roughly 30 percent of the 19.3 million single-headed households can be found in this region. Approximately one-third of all homes with householders over 60 fall in southern states.

Another crucial factor to energy consumption and conservation that sets the South apart covers quality and efficiency of its housing. Figures from the 1980 United States Census indicate that 20 percent of the nation's substandard housing is located in the South. Perhaps more crucial to the energy situation is the fact that many of the homes that meet structural and safety standards established by the government lack basic energy features. The 1982 Energy Consumption Survey (Thompson, 1984) provides these additional facts about the efficiency of single-family dwellings in the South.

1. Almost 59 percent of southern homes have no storm

windows and more than 46 percent lack storm doors.

2. In contrast, three out of every four households have some roof or ceiling insulation, and about two-thirds have complete roof insulation. Slightly less than half of these single-family units have complete wall insulation.

3. Another curious fact concerns different levels of features based upon cooling degree days (cdd). Areas with more than 2000 cdd have greater cooling loads than areas with less than 2000 cdd. However, more than 85 percent of households in warmer areas have no storm windows and 68 percent have no storm doors. In contrast, only 41 percent of the units in cooler areas lack storm windows, while 32 percent lack storm windows.

Another factor of the southern housing stock that may affect energy efficiency is age of dwelling units. Nearly three-fourths of these units were built in an era when fuel oil was cheap and little attention was paid to energy efficiency. Almost 45 percent of the southern homes were built prior to 1960 and an additional 25 percent were built between 1960 and 1970 (Thompson, 1984).

Other socio-economic and demographic characteristics of southern families compound the energy situation. Financial status of households in the South affects ability to make energy conserving changes to more energy inefficient homes.

The median income for southern Americans was $22,495 in 1983, the lowest value of the four regions. Southern households are also faced with a higher likelihood of financial difficulties, where the poverty rate is 17.2 percent. The 1982 Energy Consumption Survey (Thompson, 1984) notes that one-third of all southern households earn less than $10,000 annually, while almost one-fifth fall below 100 percent of the poverty level. One out of four households have incomes below 125 percent of the poverty level.

Summary

This chapter outlined some of the basic considerations upon which this research was formed. An historical perspective of the energy situation in the United States was presented, indicating the rising importance of adoption of energy conservation techniques. The chapter also summarized previous research conducted to isolate and understand the factors that affect energy consumption. The theoretical and practical aspects of energy conservation were outlined, with importance placed upon the unique needs and characteristics of rural southern households.

CHAPTER III

DEVELOPMENT OF UTILITY BILL
CALCULATION PROCEDURE

Introduction

If a single utility company provided service for an entire county and customers were charged the same rate from year to year, one could easily calculate an average monthly bill for a particular utility. However, the dynamics of American society do not allow utility prices to become stagnant. A customer's utility bill may change several times each year due to a multitude of factors. The most relevant factor is rate schedule changes.

Chapter three focusses upon the price that residential customers must pay for energy and the methods used to calculate such prices in the present study. As stated in chapter one, an objective of this study is to compare consumer attitudes and energy usage with utility rates. Because it was impossible to determine what company provided service to each person in the sample, it was necessary to develop a procedure to calculate an average monthly utility bill for 16 counties in the sample. In order to understand this procedure, one must become familiar with the utility industry and how rates are set. The following chapter explains types

of utility companies, provides an overview of utility rate
regulation, discusses components of utility bills, and out-
lines differences among rate structures. The remainder of
the chapter explains the calculation procedure.

Classification of Utility Companies

For the purpose of this study, there are three classi-
fications of utility companies : private, cooperative, and
municipal. Private utility companies are technically tax-
paying businesses. These investor-owned utilities (IOU) may
be owned by an individual proprietor or a small group of
people, but they are usually managed by representatives re-
gularly elected by shareholders. On the other hand, while
cooperatives are also organized by a group of people, this
type of utility company is primarily user-owned and expli-
citly concerned with supplying services to a specific area.
In general, cooperatively-owned utilities are exempt from
federal income tax laws. Most cooperatives have been fi-
nanced by the Rural Electrification Administration, thus
the reference as "rural" cooperatives. A municipally-owned
electric system is owned or operated by a local government
engaged in serving residential, commercial, and/or indus-
trial customers within a specified geographic region. Its
service area is usually, but not always, within the boun-
daries of the municipality. The system may generate its own
power or purchase energy from a source, then resell it to
city residents (Fuernstein, 1979). For the most part, muni-

cipal companies included in this study purchased fuel or electricity from a generating plant.

<p align="center">The Utility Industry and Rationale
for Rate Regulation</p>

According to federal and state governments, businesses concerned with supplying energy are viewed as natural monopolies. In the true sense of the word, utility companies often monopolize the market, serving as the only source of electricity or natural gas within an area. The "natural" monopoly concept implies that companies operate more efficiently and economically when they have a captive audience and do not need to compete for business as under normal conditions.

> Natural monopolies of this kind were recognized because the unit cost of providing service is lower with a monopoly than under competition. The bases for this conclusion are that (1) monopolies eliminate costly duplication of facilities, (2) utilities realize decreasing average unit costs as output increases, and (3) economies of scale are realized when utilities are able to utilize larger, more efficient facilities. (Fuernstein, 1979).

However, this monopolistic situation places customers at a distinct disadvantage. Customers are seldom able to "shop" for the best bargain in utility rates. Their choices are limited by where they live and by the company that has authorization to service an area. Aside from the fact that most customers lack opportunities to select a low-cost utility company, customers are also unable to bargain with util-

ity companies in setting rates. As a result of the inherent nature of utility companies, state and federal governments are authorized to regulate rates that they establish. Such regulation protects the public from potential excesses of monopoly pricing. Through its regulatory powers, state Public Utility Regulatory Commissions (PURC) counterbalance natural monopoly conditions and serve as a substitute for competition.

States receive regulatory authority over utility rates under their police power (Fuernstein, 1979). Generally, a section within the state's public utility law confers PURC regulatory jurisdiction over specified utilities. However, the exact judicial power that a PURC maintains over rate-making is limited to determining whether rates are just and reasonable, discriminatory, or a violation of state and federal constitutional provisions.

Whether a PURC has regulatory authority over municipal utilities varies from state to state. For example, the Arkansas Public Service Commission exempts municipally-owned utilities from regulation of facilities, service, and rates. For a municipality furnishing electricity to its citizens within Arkansas municipal limits, the city itself, through its charter and city officers, possesses sole power for fix-ing rates to be charged. Table VII lists the four state PURC's contacted in this study and the types of utilities that they had authority to regulate.

TABLE VII

REGULATORY POWER OF STATE PUBLIC UTILITY REGULATORY
COMMISSIONS IN EACH STATE

STATE	NAME OF PURC	ENERGY SOURCE *				
		ELECTRICITY			NATURAL GAS	
		PR	PB	RR	PR	PB
Arkansas	Public Service Commission	x			x	
Florida	Public Service Commission	x			x	
Oklahoma	Corporation Commission	x			x	
Virginia	Corporation Commission	x		x	x	

PR   Investor-owned
PB   Municipality-owned
RR   Cooperative

*   Suppliers of Residential Service

Components of a Utility Bill

Introduction

Any program that has as its main objective to calculate an average utility bill must contain some method for handling the various components of a utility bill. For the companies included in this study, the following four basic factors were found to effect the final bill: (1) base rate, (2) customer charge, (3) fuel adjustment, and (4) additional adjustments. This section explains each component and how it is applied in the procedure.

Base Rate

The base rate is probably the most familiar of these components. This cost represents the price charged for each unit of demand used, whether in kilowatt hour (kWh), gallon (gal), or thousand cubic feet (mcf). Specific considerations in calculating this base rate will be explained later.

Customer Charge

The second component, referred to in this analysis as customer charge (CC), may also be familiar to customers. Irrespective of the base rate, a fixed charge is frequently assessed each month to cover consumer costs, which are "related to the existence of specific customers and vary with the number of customers served" (Fuernstein, 1979). This customer charge can be assessed in several ways; it may

remain constant between blocks, or increase or decrease as energy is consumed (Helden and Weistra, 1982).

In this study, three types of CC arose: flat, assessed daily, or included as portion of use. When the customer charge was a flat rate, all customers were assessed the same charge regardless of the amount of energy used (Table VIII, Example A). In some companies, a small amount of energy use (either kWh, ccf or mcf) was included in the service charge and was sometimes referred to as a "minimum bill" charge (Table VIII, Example B). The third type of customer charge was assessed on a daily basis (Table VIII, Example C).

Utility Cost Adjustment

The third component of monthly utility bills is fuel or purchase gas cost adjustments. Base rates are established for both natural gas and electric companies assuming that the company will be able to purchase gas or electric power at a predetermined cost. Ideally, this base cost will remain constant over time, which is seldom the case. The utility cost adjustment represents the difference between this base cost and the supplier's additional cost for fuel or power. It allows a utility company to pass increased operating costs onto the consumer. These adjustments are recorded on a monthly basis, so, where applicable, an average monthly FA or PGA was calculated.

TABLE VIII

EXAMPLE OF THREE TYPES OF CUSTOMER CHARGES

Example A : "Flat" Customer Charge

Arkansas Power & Light Co.

$5.75   Flat Customer Charge

$.0318/KwH   (1-1000 KwH)

$.0168/KwH   (1001 KwH +)

Example B : "Minimum Bill" Customer Charge

First Electric Cooperative Corp.

$7.25   (1-51 KwH - min. bill)

$.0422/KwH   (51-800 KwH)

$.0389/KwH   (801 KwH +)

Example C : "Daily Assessed" Customer Charge

North Arkansas Electric

$.35/day   Daily assessed CC

$.0335/KwH   (All KwH)

Special Adjustments

The calculation program also incorporated a fourth component outlined in some company rate schedules, special adjustments. This component commonly took the form of an additional kWh charge, referred to as a rider. The additional charge could be in effect for all or a portion of the year. One rate schedule required that 3.5 percent of the

total bill be added as the fourth component. Still other companies included power cost adjustments charged per unit as a part of their rate schedules.

<center>Understanding Rate Structures</center>

Analyzing rates in more than 16 counties poses unique considerations, as shown by the existence of at least four different components of a monthly bill. Another considera- tion deals with the type of rate structure included in the schedule. The rate structure or tariff generally defines several components of the total amount of money that must be paid for the energy, as well as relationships between these components. An extensive treatment of the various rate structures is beyond the scope of this study, but an over- view of rate structures is warranted. The first level of distinction between rate schedules concerns whether the base rate changes or remains the same throughout the schedule.

General Types of Rate Structures

Flat (Proportional) Rates : If the rate schedule assesses the same rate regardless of how much energy is used, then the schedule contains a "flat" rate structure (Figure 2). Flat rates are often referred to as proportional rates. Early flat rate schedules charged all customers a lump sum regardless of the quantity consumed or time of use. Now, however, the typical proportional structure contains a customer or minimum charge, plus a constant charge per kWh

or mcf of consumption (Fuernstein, 1979). This constant charge reflects energy costs and demand costs equally distributed over anticipated total energy consumption. This rate structure promotes conservation goals since no economic incentive exists to increase consumption.
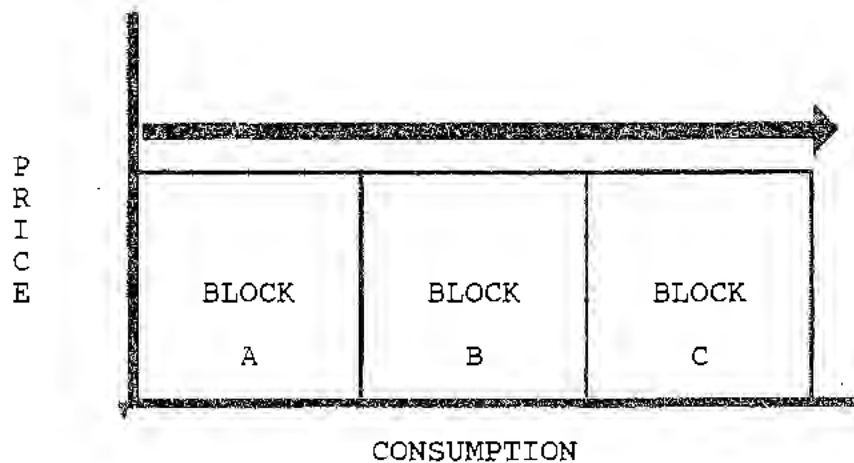
Figure 2. Illustration of Flat Rate Structure

Block (Progressive or Degressive) Rates : If the rate schedule is "blocked", the cost of a unit of energy changes when a certain level of usage is reached. The length of blocks (expressed in terms of kWh, mcf or gal) may differ from one rate schedule to another. There are two types of block rate schedules, progressive and degressive.

Progressive rates assess a higher unit cost as consumption rises (Figure 3), thus suggesting inverted rates. As use increases from Block A to Block B, the price charged per

unit rises. Higher charge tail-end blocks (Block C) are created by placing a greater portion of the demand costs in these blocks. The inverted rate structure encourages conservation since customers who use higher amounts of electricity or natural gas are charged more per unit of energy consumption than lower usage customers (Fuernstein, 1979).
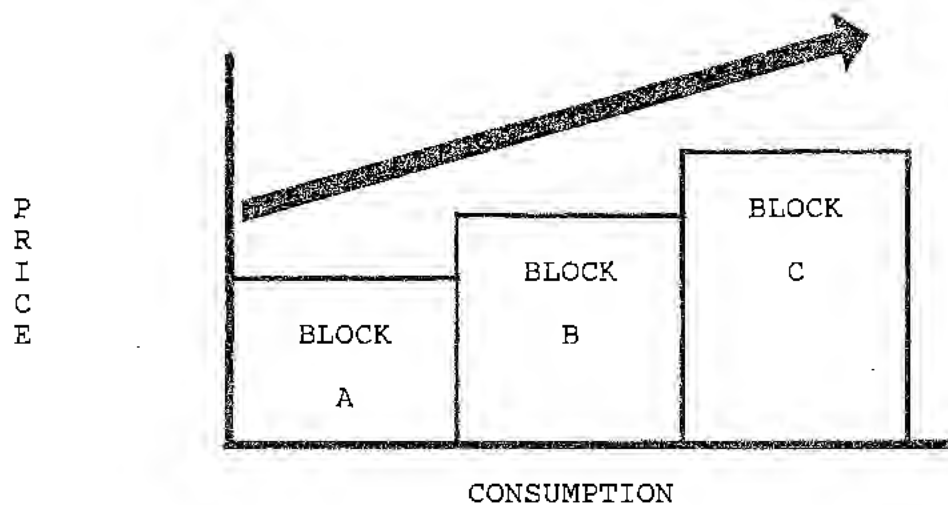
Figure 3. Illustration of Progressive Rate Structure

Degressive rate structures, essentially the opposite of progressive rate structures, are commonly called declining block rate structures (Figure 4). These have been the most widely used rate schedules for residential and other small volume customers (Fuernstein, 1979). The rate structure divides energy consumption into blocks of use (e.g., first 20 kWh, next 30 kWh, next 450 kWh, all above 500 kWh) and charges a decreasing price per unit for each successive

blocks. Higher unit costs are assessed in consumption Block
A in order to return a greater portion of demand costs.
This practice assures the utility company that demand costs
will be recovered from each customer. Although degressive
rate structures reflect the fact that efficiency increases
as consumption increases, they encourage customers to use
higher amounts of energy in order to receive lower average
unit costs (Fuernstein, 1979).
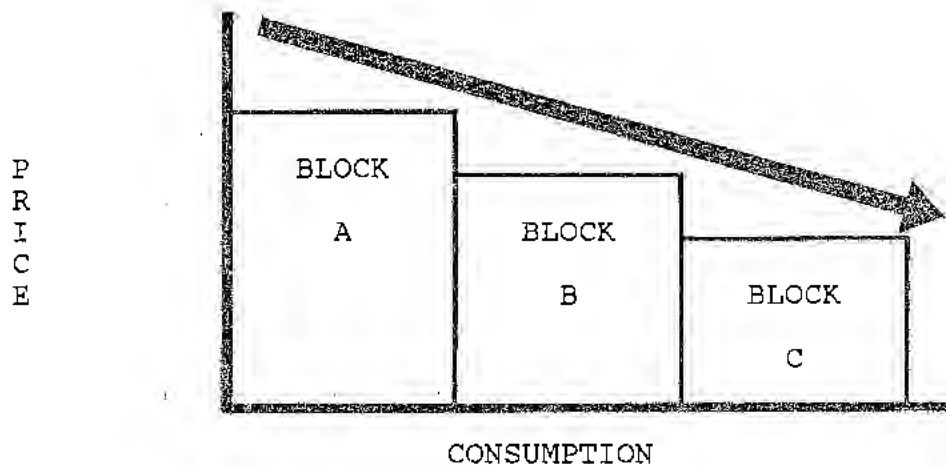
Figure 4. Illustration of Degressive Rate Structure

Some rates structures incorporate more than one of
these basic types. For example, a rate structure may
combine a progressive structure with a degressive structure,
so that prices increase to a certain block, then the rate
per unit decreases for blocks above the peak block. In
general, all rate structures provide a proportional (flat)

rate once consumption reaches a certain level.

General Types of Blocks

Each of these basic structures can also be modified between two different types of tariffs, step tariff and block tariff. In the step tariff, unit cost depends upon where the level of consumption falls. Figure 5 illustrates this point. If a household consumes 750 kWh of electricity, then each kWh costs $.08, the last block price.
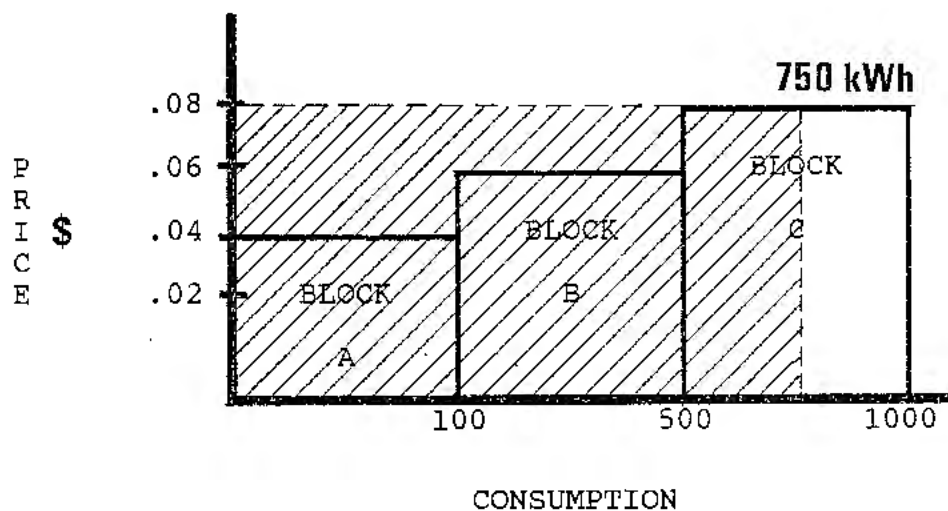
Figure 5. Illustration of Step Tariff

On the other hand, the block tariff establishes a unit charge for each block. When consumption level moves to a higher block, the cost of energy at each block is calculated based on a different unit cost. For example, if another households uses 750 kWh of electricity on a block tariff

such as in Figure 6, the first 100 kWh would cost $.04/kWh, the next 400 kWh would cost $.06/kWh, and remaining 250 kWh would cost $.08/kWh. Customers only pay the higher or lower rate for units consumed within a particular block. This was the most prevalent type of tariff in the rate structures used for the present study.
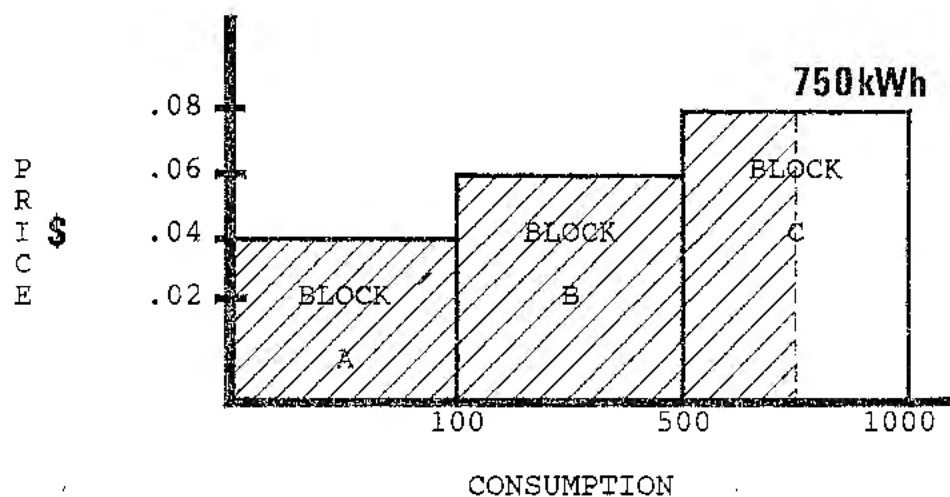
Figure 6. Illustration of Block Tariff

Supplemental Rate Information

Rate Periods

Until this point, the discussion has implied that each company maintained one rate schedule a year. However, during 1980, the rate schedule used by a company to determine customer bills may have changed several times. For this analy-

sis, each new schedule constituted a "rate period." For example, Arkansas Power and Light had three rate schedules from January 1 to December 31, and thus had three rate periods (Table IX).

TABLE IX

RATE PERIODS OF ARKANSAS POWER AND LIGHT

Rate Period	Effective Dates
1	January 1 - May 15
2	May 16 - October 26
3	October 27 - December 31

Interim Rates and Effective Schedules

In some companies, two or more schedules may have been in effect at the same time or overlapped by several days or months. It was important to determine which schedule contained the effective rate. Generally, if an interim rate change was adopted while a pre-existing schedule was in effect, the interim report superceded the existing rate. To illustrate this point, a company may have submitted to the PURC a rate increase request. Based upon a needs analysis, the agency approved the request, making the rates effective

from March 13, 1979 to November 28, 1980. However, before
this rate expired, the company requested a modification of
the original rate schedule. The agency approved the new
schedule as interim rates, with effective dates from Decem-
ber 31, 1979 to December 31, 1980. Therefore, these interim
rates superceded the original rates and became the effective
rates for all of 1980.

Seasonal Rates

One other change may have occurred even within a single
rate period. Some companies provided two rates, one for
summer months (i.e., May to September) and another for base
or winter months. Thus, the effective rate could change de-
pending upon the month. An example of a schedule that con-
tains seasonal rates is provided in Table X. In general,
higher costs per unit of consumption accompany periods of
greater system load, such as air conditioning loads in hot
summer months (Fuernstein, 1979).

Procedures for Calculating Monthly Bills

Now that the basics of utility rate analysis have been
outlined and specific terms and concepts defined, it is
possible to examine procedures for calculating average
monthly electric and natural gas bills. For the present
research, average monthly bills were based upon estimated
usage amounts of 1000 kWh for electricity and 100 mcf for
natural gas.

TABLE X

SEASONAL RATE SCHEDULE *

Summer (June - September)		Winter (October - May)
$5.75	CC	$5.75
$.0345/kWh (all kWh)		$.0318/kWh (1-1000 kWh)
		$.0168/kWh (1001 kWh +)

*   Months that are included within each season are
    listed below the appropriate heading.

Summary of Calculation Procedures

Several levels of calculations determined an average
bill for a state in the sample. Figure 7 illustrates the
hierarchial logic of these steps. Very simply, five general
"bills" were calculated, from seasonal bills in each rate
period to an average state utility bill. The pyramid sug-
gests that lower calculations were completed before advanc-
ing to a higher level.

A more detailed flowchart of the top three levels is
provided in Figure 8. Four average state utility bills were
calculated based upon mean utility bills in the four coun-
ties per state. Each of the sixteen county bills depended
upon average costs for a maximum of four electric or three
natural gas companies servicing the county.
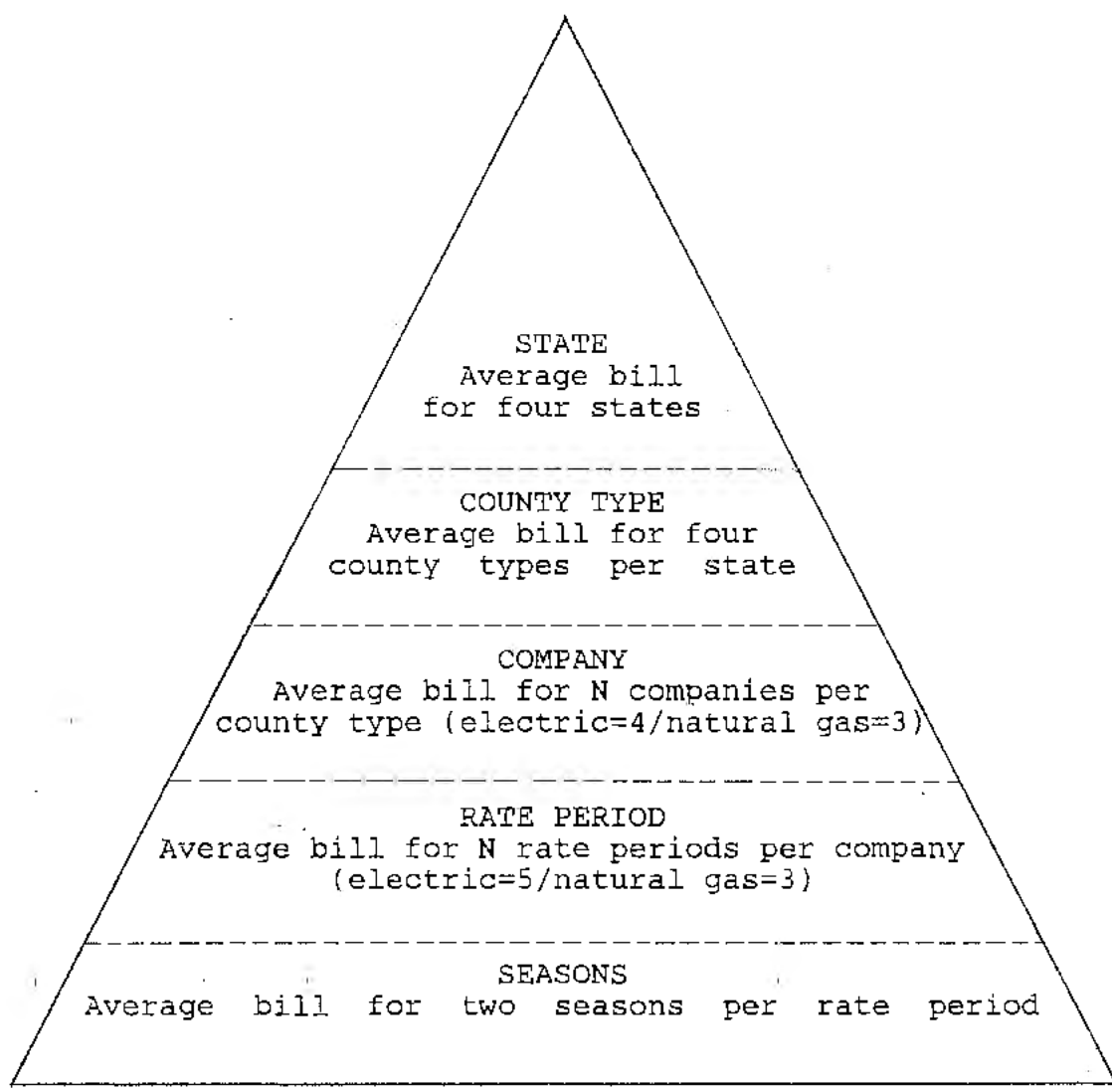
Figure 7.   Hierarchial Logic for Calculating Average
            Utility Bills
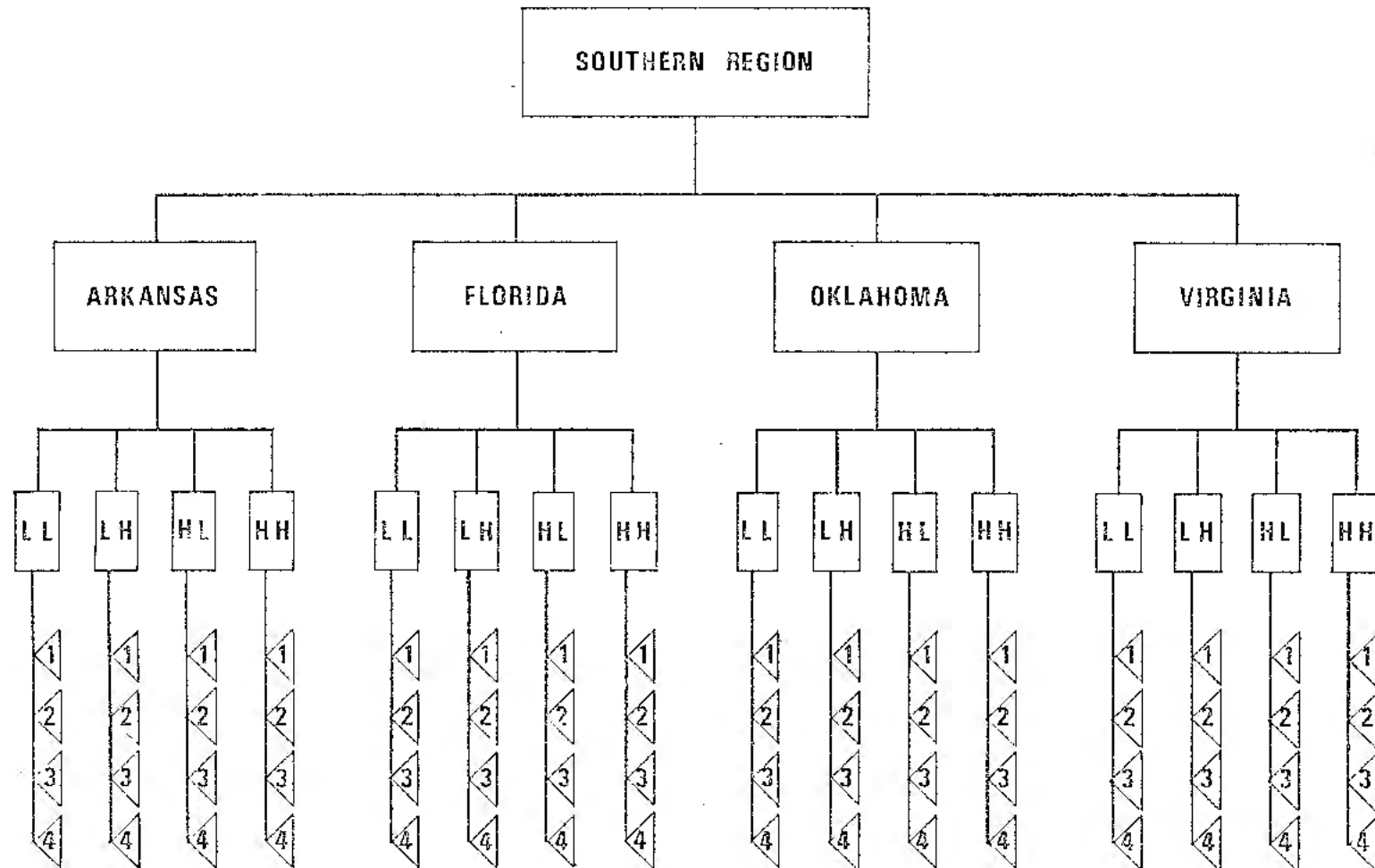
(Triangles represent companies in each county.)

Figure 8. General Flowchart for Calculating Average Bill

Figure 9 indicates that the average company bill was composed of three primary components (i.e., average monthly generating costs, average monthly utility cost adjustments, and average monthly special adjustments). Average generating costs were outlined by rate schedules (e.g., rate periods), which could potentially change five times for electric companies and three times for natural gas companies. Within a single rate period, two seasonal rates were possible, so an average bill for each season was incorporated into the procedure. Each seasonal bill was based upon the cost of all units consumed within each block. The procedure included five electric and seven natural gas blocks.

For an expanded explanation of the formulas used in the procedures, see Appendix A. Information concerning layout of cards and basic coding information is also presented in this appendix. A copy of the final computer program may be found in Appendix B, while Appendix C summarizes the rate information for each company in the study.
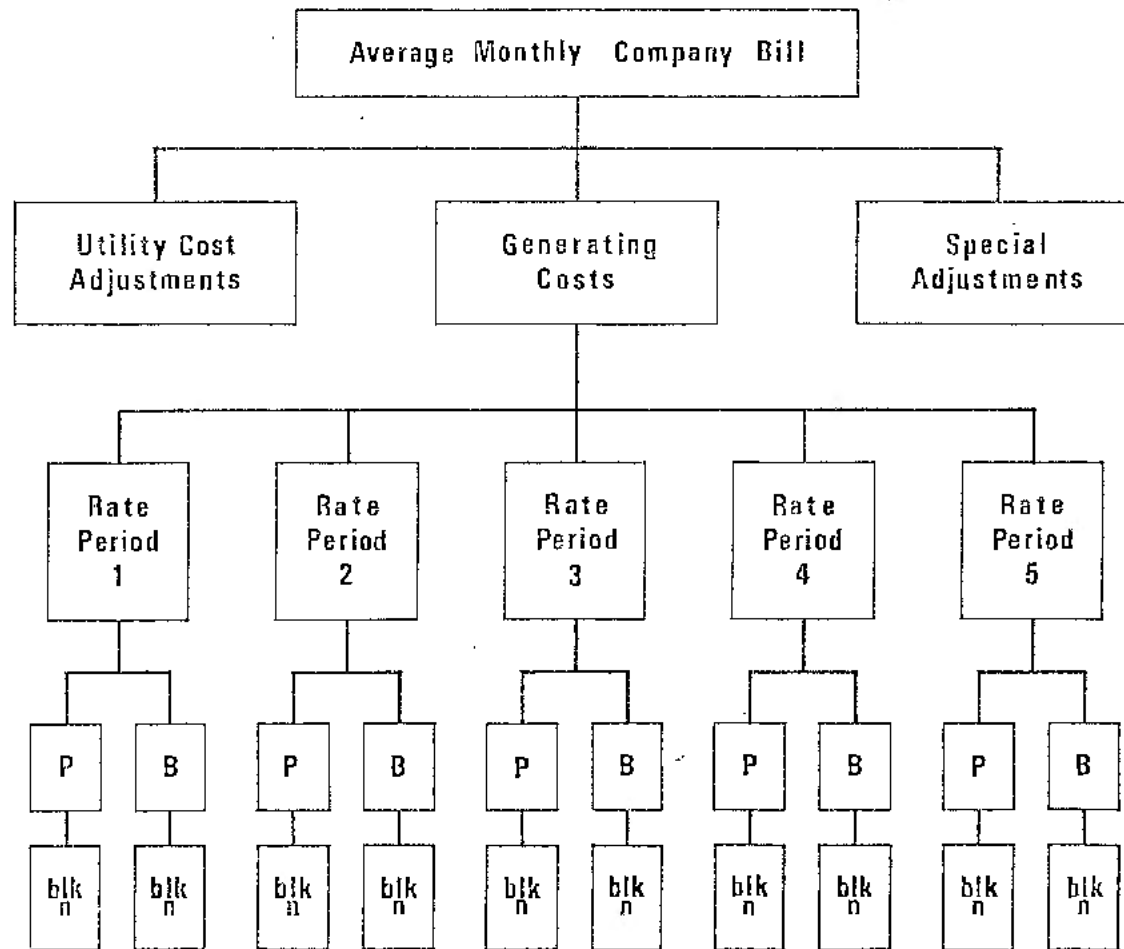
Figure 9. Flowchart for Calculating Bill for Each Company

SUMMARY

This chapter presented a general overview of the utility industry, including rate-making and regulatory practices. It also clarified components of utility bills, general types of rate structures, and basic tariff divisions in terms of the present research. Additional explanations discussed rate periods, effective schedules, and seasonal rates as applied to this study. Major steps in calculating average electricity and natural gas bills program were summarized.

CHAPTER IV

METHODOLOGY

Introduction

The previous chapter discussed development of a model
used in this study to calculate average utility bills. It
also presented a perspective of utility rate-making and
regulation. The values calculated from this model were used
in the remaining analysis.

This chapter explains methods and procedures employed
through this research. It further describes the population
from which the sample was derived and includes methods of
sample selection, instrumentation, data collection, and data
analysis. This study utilized two independent sets of data,
customer information and utility rate schedules. Customer
information included household characteristics (i.e., house-
hold size, family income, energy-related attitudes, and
demographics of household head) as well as housing unit fea-
tures (i.e., age and square feet). These data were collec-
ted via an indepth survey conducted by the Southern Regional
Housing Research Technical Committee (S-141) during the
summer of 1981. The second set of data contains actual 1980
utility rate information for electric and natural gas com-
panies in Virginia, Florida, Arkansas, and Oklahoma.

Type of Research

For this study, the author chose a descriptive type of
research utilizing data from the Southern Regional Technical
Committee S-141. Descriptive research is nonexperimental
and deals with nonmanipulated variables (Best, 1981). This
study was descriptive because it reviewed conditions that
have already taken place. It dealt with relationships among
variables such as energy concern, utility price, and level
of energy use.

Customer Information

Purpose of S-141

The S-141 Technical Committee focussed its attention on
the housing crisis of rural, non-farm families. The survey
was developed in response to the needs of policymakers and
housing professionals to understand the familial constraints
that keep households from attaining quality housing. The
survey requested information on demographic characteristics,
family resources, family decision-making processes, and con-
sumer acceptance of alternative housing.

Population and Sample

The population for the S-141 study consisted of rural,
non-farm households in the southern region of the United
States. The household sample for this study included 853 of
the 1804 respondents in the S-141 sample. Although the re-

gional project included seven states, the present study re-
stricted data to four states (Florida, Arkansas, Oklahoma,
and Virginia) since the author had access to the necessary
utility rate information for these states. The total number
of respondents in each state was determined by that state's
proportion of farm households within the region. These
population figures were based upon the 1970 Census, since
the 1980 Census was not available when the sampling proce-
dures were developed. The sample was generated using two
levels of selection, by county and by household.

County Selection The first level of sampling relied
upon a two-phase stratification process to determine what
counties met selection criteria. Phase I was based upon
median annual income per household and Phase II considered
the number of non-farm households. Further information on
selection of counties is available from the S-141 Technical
Committee (1984). Four strata resulted from this procedure:
Low/Low (low median annual income and low non-farm house-
holds), Low/High (low median annual income and high non-farm
households), High/Low (high median annual income and low
non-farm households), and High/High (high median annual
income and high non-farm households). One county from each
stratum was randomly selected for inclusion in the survey.
Table XI shows the four counties selected in each state.

Household Selection : Researchers randomly selected
households in each state using the 1980 county property tax

rolls. Researchers used tax roll numbers to identify resi-
dential properties, then randomly selected the sample from a
list of computer-generated identification numbers. Any
occupied housing unit on the selected property was included
in the sample, regardless of tenure status. An alternate
sample list was provided by over-sampling two and one-half
times more than the number of surveys needed in each county.
This list allowed for substitution of ineligible households,
non-residential properties, unoccupied housing units, and
refusals. Researchers from Florida selected households from
computer-generated, randomly selected drivers license lists.
Table XII lists the number of households surveyed in each
county and state.

TABLE XI

NAME OF COUNTY BY STATE AND COUNTY TYPE

STATE	LL	LH	HL	HH
Arkansas	Stone	Baxter	Sevier	Ouachita
Florida	Washington	Walton	Okeechobee	Putnam
Oklahoma	Love	Caddo	Craig	Pawnee
Virginia	Madison	Southampton	Culpepper	Rockingham

TABLE XII

NUMBER OF HOUSEHOLDS IN SAMPLE
BY STATE AND COUNTY TYPE

STATE	LL	LH	HL	HH	TOTAL
Arkansas	36	60	39	80	215
Florida	17	47	18	75	157
Oklahoma	27	57	27	58	169
Virginia	38	109	44	121	312
TOTAL	118	273	128	334	853

The Survey

S-141 Technical Committee members developed the survey "Perceptions of Alternative Housing." (See Appendix D for complete instrument.) It was evaluated and revised numerous times before and after conducting pilot studies. The final survey consisted of four parts : (1) Present Housing Situation, (2) Decision-making Practices, (3) Consumer Acceptance and (4) Demographic Characteristics. This study utilized data from three sections of the survey, parts one, two and four.

Part one requested information on such items as average utility costs, square footage, number of bedrooms, condition of structure, and presence of energy-saving features. Part

two of the survey focussed upon attitudes towards energy crisis, upon how households make housing decisions and upon types of energy changes recently made or planned. Part four gathered information related to each family member, including amount and sources of income, education level, and occupation.

Measuring Energy Consciousness: One of the primary objectives of this study focussed upon energy-related concerns expressed by households. Although general in nature, three questions from the S-141 survey provided an elementary measure of energy consciousness or concern possessed by families in the sample. They also indicated level of salience of the crisis in their lives. The following three questions were combined to establish degree of energy concern or consciousness expressed by each household:

- Do you believe there is an energy crisis ?
- How severe do you believe the energy crisis is ?
- Do you believe that the energy situation has had any impact upon your present dwelling or upon how you make decisions about your housing ?

Based upon responses to these three questions, households were classified into two subgroups, high energy concern and low energy concern. High energy concern households believed that the energy crisis existed, that it was severe or very severe, and that it did impact decisions made about

their housing. For simplification, all other households possessed low energy concern or consciousness.

Determining Percent of Income Devoted to Utility Costs

Another measurement used in the present study concerned percent of income consumed by energy payments. Responses to two questions provided this ratio, self-reported monthly utility costs and annual income for 1980.

Households reported high, low, average utility costs for electricity, natural and bottled gas, oil and combinations of these sources. Average monthly bills for each source were summed to calculate total monthly energy expenditures. If an average monthly bill was not provided by a household, the midpoint between reported high and low bills was substituted for this mean bill. Households who reported that they used a particular energy source at no cost were given a zero average bill for that source and excluded from tests on that energy source.

Income for each member of the household was recorded by categories. Midpoints for each response were added to calculate annual household income. Both take-home pay and supplemental income composed this figure. A ratio of total monthly utility costs and monthly income was then calculated and used.

Utility Rate Information

In addition to customer information from the S-141 study, the author collected utility rate information for

companies and departments supplying electricity and natural gas in each of the 16 counties. This section explains methods used to secure rate information in effect during 1980. The assistance of three organizations faciliated collection of this information: State Public Utility Regulatory Commissions (PURC), Rural Electric Cooperative Associations (RECA), and Municipal Governments.

Methods for Collecting Data

Two general steps were accomplished to collect the correct utility information. First, the author identified companies that provided electricity and natural gas services in the sixteen target counties. Second, residential rate schedules used by these companies from January 1, 1980 to December 31, 1980 were collected. Appendix E provides a list of utility companies used in the study, as well as the counties served and company type.

Collecting Names of Companies Servicing Areas : Several documents proved helpful in securing names of the companies that serviced the 16 counties. One of these documents was a directory of cities available at the PURC. The directory contained an alphabetical listing of cities in the respective states and companies providing each regulated utility. A typical entry would appeared as follows :

CITY	COUNTY	UTILITY : SOURCE
Pine Bluff	Jefferson	Electric : Ark. Power & Light
		Gas : Ark./La. Gas Co.

A second item from the PURC used to collect company names was a jurisdictional map. One of these maps outlined service areas of regulated electric companies located in each state. A similar map showed the location of natural gas pipelines for these areas and indicated whether service boxes (access points) were available. If no service box existed in the county, natural gas was not available.

Although rural cooperatives were generally included in utility directories of the four states, Rural Electric Cooperative Associations (RECA) in Arkansas and Oklahoma were contacted to verify rural electric sources in each county. The RECA provided a list of names and addresses of companies that served rural areas in these two states.

Another source, municipal directory, was used to identify municipally-owned utilities. This document contained addresses, and phone numbers for city utility department, mayor's office, or city manager. Telephone calls were made to the specified office to determine if a municipality provided electric or natural gas service to city residents.

Collecting Utility Rates : Rates for regulated and nonregulated companies were secured in the following manner. Effective rates for regulated utilities (i.e., private electric and natural gas companies, and Virginia rural electric cooperatives) were secured from rate schedules included in state regulatory records. Although Arkansas and Oklahoma PURC's did not directly regulate rural cooperatives records

of fuel adjustment costs and actual rates of these companies were also available in state records. Recordkeeping varied among states, so assistance of rate specialists facilitated locating residential rate data, and distinguishing between original and interim rates. Since none of the commissions contacted in this study maintained jurisdiction over public utility departments, municipal government offices were contacted directly for public utility rates in each county.

Effective rates, customer charges, and monthly fuel adjustment information were requested via letter or phone call from all companies providing municipal electric or natural gas services, as well as rural electric services. In addition, letters were sent to private companies to verify that rates secured from PURC were accurately recorded. Appendix F provides a copy of this letter and rate form.

Analysis of Data

Data obtained from utility companies were coded and stored on disk, while customer information was taken from the S-141 regional data tape. After calculation of average county bills and cost per million Btu (MBtu), summary rate information was merged with customer information into a single file used in the remaining analysis. The Statistical Analysis System (SAS) computer program was used to develop calculation procedures and to analyze data. Preliminary data analysis was conducted through frequencies, means, and percentages for basic descriptive purposes. Chi-square test

was used to determine whether distribution of energy concern
respondents differed significantly from the expected normal
distribution. Analysis of variance, Pearson product moment
correlation and Duncan's multiple range comparison test were
used to analyze the relationships between interval level
variables.

Summary

This chapter outlined the methods of data collection
and analysis incorporated into the present study. A sample
size of 853 was selected from households included in a
Southern Regional Housing survey conducted in 1981. Data
from this regional study provided consumer characteristics,
including average monthly utility payments for natural gas
and electricity, as well as perceptions of the energy crisis
and its impact upon housing decisions. Utility rate infor-
mation was secured from companies servicing these counties.
Results of the rate calculation procedure were analyzed with
consumer data through statistical procedures including anal-
ysis of variance, Chi-square, Pearson product moment corre-
lation and Duncan's multiple range comparison test.

CHAPTER V

ANALYSIS OF DATA

Introduction

The overall purposes of this study were to develop and
validate a computer procedure to calculate average utility
rates for a single county, and to determine if these rates
serve as a sociological indicator of energy use. This chap-
ter presents findings of the calculation procedure and com-
parative analysis of consumers, energy use, and rates. These
findings are presented in the following order: (1) charac-
teristics of the sample and housing units; (2) overview of
energy use and rates; and (3) statistical result by objec-
tive.

Characteristics of the Sample and Housing Units

Description of Households

Two types of information describe demographic charac-
teristics of the respondents. This section presents general
characteristics of the family (i.e., size of household, an-
nual income, and percent of income devoted to utilities) as
well as demographic information about the male and/or female
household head (i.e., age, education, and occupation).

68

General Characteristics of Household   Households in
this study averaged 2.6 members, with roughly 25 percent of
the respondents living in homes with more than three people.
Respondents earned an average annual income of $15,478, and
spent approximately 8.6 percent of that figure on monthly
utility bills. Table XIII provides a further breakdown of
these general characteristics by state and county type.
One can see from these figures that the income of Virginia
respondents was higher than respondents from other states.
In addition, Virginians paid a larger portion of monthly
income for utility costs. Arkansans earned an average of
$4000 less per year than Virginians and paid almost 4.5
percent less on energy bills than these same households.
Oklahoma households reported the second highest average
annual income ($19,214) but paid the lowest average amount
for utility costs (5.2 percent). This factor could be
caused by a high number of households that do not pay for
natural gas supplied to their homes.

Residents in Low/Low counties earned the lowest mean
annual income, $14,906, but spent a higher percentage of
that income for energy bills (Table XIII). In contrast,
households in High/Low counties spent, on the average, only
five percent of monthly income on energy costs. Another im-
portant note concerns the annual income of households in the
high income, high non-farm county. Average reported income
is only $2000 more than the low income counties, while these
households pay only one-tenth of one percent less on monthly

TABLE XIII

GENERAL CHARACTERISTICS OF HOUSEHOLDS
IN SAMPLE BY LOCATION

Location	Mean Characterstics Household Size	Annual Income*	Percent for Utility Costs
State			
Arkansas	2.5	$15,504	7.0%
Florida	2.8	$15,945	8.5%
Oklahoma	2.5	$19,214	5.2%
Virginia	2.7	$19,381	11.4%
County Type			
Low/Low	2.5	$14,906	9.8%
Low/High	2.5	$18,622	9.3%
High/Low	2.7	$20,197	5.0%
High/High	2.6	$16,923	9.7%

* Annual income represents self-reported data and may not
  reflect actual total household income.

heating, cooling and lighting bills.

Mean characteristics of residents in each county type per state are presented in Table XIV. It is evident from the table that households in Low/Low counties had lower annual incomes than counterparts in other counties, with the lowest average income found in Florida ($12,191). Another important note is that even the highest average income in Arkansas ($16,683 in Low/High county) falls substantially below the average annual income of households in Virginia's low income county ($19,086). Virginia households in the High/High county reported considerably less income than representative of the county type. This reduced average income may be caused by missing data for household heads or primary providers. Therefore, the average percent of utility costs that corresponds to this county (14.2 percent) may not be representative of actual payments.

Average percent of income devoted to utility bills also varied between counties within each state. Households in Oklahoma's high income counties had the lowest income to utility payment ratio, while utility bills in Virginia's High/High county consumed the largest percent of monthly income. The proportion of utility costs payments was two percent higher in the High/High county of Arkansas than in the Low/Low county. For all states, the lowest average ratio of income to utility costs was found in high income counties with low number of non-farm households.

TABLE XIV

GENERAL CHARACTERISTICS OF HOUSEHOLDS IN SAMPLE
BY COUNTY TYPE WITHIN STATES

State and County Type	Household Size	Mean Characterstics Annual Income *	Percent for Utility Costs
Arkansas			
Low/Low	2.8	$12,817	6.7%
Low/High	2.2	$16,683	6.4%
High/Low	2.5	$15,636	4.3%
High/High	2.6	$15,957	8.7%
Florida			
Low/Low	2.7	$12,191	7.6%
Low/High	2.6	$14,284	9.5%
High/Low	2.3	$17,319	5.6%
High/High	3.0	$17,643	8.7%
Oklahoma			
Low/Low	2.6	$13,750	5.3%
Low/High	2.3	$17,916	6.9%
High/Low	2.4	$22,193	3.6%
High/High	2.6	$22,069	4.1%
Virginia			
Low/Low	2.3	$19,086	10.4%
Low/High	2.7	$21,526	11.4%
High/Low	3.3	$24,093	6.1%
High/High	2.5	$14,669	14.2%

* Annual income represents self-reported data and may not
reflect actual total household income.

<u>Demographic Information for Household Head</u> The follow-
ing three demographic variables provided a brief description
of male and female heads of household in the study: (1) age,
(2) education and (3) occupation. For the purpose of this
research, all males and females listed in the survey as
"head," "co-head," or "spouse" were classified as head of
household. The average age of both male and female house-
holders was approximately 51, with males being slightly
older than females (51.9 versus 51.6). Female respondents
had a mean education level of 11.6 years, while male respon-
dents completed an average of 11.4 years of school. Little
variation in householder characteristics was seen between
states, although Arkansas householders were, on the average,
older and more educated than residents of other states
(Table XV). Virginia male householders were the least edu-
cated and youngest, while female heads of household in
Florida were the youngest and least educated.

Householder characteristics also vary across county
type. Table XV reveals that household heads in Low/Low
counties were the youngest and least educated of all house-
holders. Male and female householders in High/Low counties
tended to be the most educated, although slightly older,
than householders in Low/Low counties.

A detailed summary of these two householder character-
istics within each state/county combination is provided in
Table XVI. On the average, male householders in Arkansas's
low income, low non-farm county, were the least educated

TABLE XV

MEAN AGE AND EDUCATION LEVEL FOR MALE AND
FEMALE HOUSEHOLDERS BY LOCATION

Location	Mean Characterstics			
	Female Head		Male Head	
	Age	Education	Age	Education
State				
Arkansas	54.8	12.0	54.8	11.7
Florida	49.8	11.4	50.7	11.4
Oklahoma	52.3	11.5	52.9	11.6
Virginia	50.0	11.5	50.2	11.1
County Type				
Low/Low	50.0	10.8	50.7	10.5
Low/High	52.0	11.8	52.1	11.3
High/Low	51.2	12.1	51.2	12.1
High/High	52.0	11.5	52.6	11.5

TABLE XVI

MEAN AGE AND EDUCATION LEVEL FOR MALE AND FEMALE
HOUSEHOLDERS BY COUNTY TYPE WITHIN STATES

State and County Type	Mean Characterstics			
	Female Head		Male Head	
	Age	Education	Age	Education
Arkansas				
Low/Low	51.1	10.3	54.5	9.6
Low/High	58.6	12.8	58.4	12.9
High/Low	54.4	11.5	54.8	11.3
High/High	53.9	12.5	51.7	11.9
Florida				
Low/Low	54.3	10.1	54.3	10.1
Low/High	47.9	11.9	46.3	11.5
High/Low	53.3	12.8	51.3	13.3
High/High	48.9	11.0	52.1	11.2
Oklahoma				
Low/Low	50.0	10.0	50.1	10.2
Low/High	54.7	11.4	53.8	11.4
High/Low	52.8	12.2	53.9	12.3
High/High	50.2	11.9	53.0	12.2
Virginia				
Low/Low	47.0	12.2	45.0	11.8
Low/High	48.5	11.4	50.3	10.3
High/Low	46.6	12.3	46.9	12.4
High/High	53.7	11.0	53.2	11.1

with slightly more than a ninth grade education. On the other hand, male householders in the Low/High county of Arkansas had attained the highest level of education, 12.9 years. Females in Oklahoma's Low/Low county averaged the least education of women householders, while women in Arkansas's Low/High and Florida's High/Low counties had received an average of 12.8 years of education. Mean age of female householders ranged from 46 years in Virginia's High/High county to 58.6 years in Arkansas's Low/High county. On the average, the youngest male householders lived in Virginia's Low/Low county while the oldest male heads were also in Arkansas's Low/High county.

Occupations of male and female household heads are presented in Table XVII. Roughly one-fourth of female householders were retired, while one-fifth of males reportedly left the workforce. Although nearly twenty-five percent of females were employed in sales or clerical occupations, approximately 1 out of 20 male heads held similar jobs. Slightly more males held professional or semi-professional jobs than did females, 22 percent for males compared to 20 percent for females. Another discrepancy in occupations is in the number of male and female managers. Less than four percent of female heads had managerial positions, yet more than ten percent of male householders were managers.

Description of Housing Units

To describe the housing units, mean age and size were

TABLE XVII

OCCUPATION OF MALE AND FEMALE HOUSEHOLDERS

Occupation	Female Head	Male Head
Professional/ Semi-professional	19.9%	22.0%
Manager	3.2%	10.2%
Sales/Clerical	23.6%	5.7%
Craftsman/Operator	7.5%	26.0%
Retired	23.4%	20.5%
Other	22.4%	15.6%

computed for dwellings in the region as well as for each
state and county type. On the average, housing units were
26 years old and approximately 1482 square feet in size.
Table XVIII indicates that homes were generally older in
Virginia and larger in Oklahoma. Conversely, mean age of
housing units was lowest in Florida, and mean dwelling size
was lowest in Arkansas. These figures also indicate that
units in Low/Low counties were generally smaller and younger
than housing units in other counties. Results also reveal
that nearly half of the housing stock in this sample was
built between 1950 and 1960, well before energy-savings was
considered in housing design.

When these figures are considered by county type within
each state (Table XIX), older homes tended to be found in
higher income counties. It is interesting to note that,
while larger housing units were in higher income counties in
Arkanasa and Florida, the largest houses in Oklahoma could
be found in the Low/Low county.

Overview of Energy Use and Rates

One of the questions that prompted this study concerned
the variation in utility bills across the region. It was
evident from preliminary analysis of the S-141 regional data
that substantial differences existed in total bills from one
state to another. Floridians reported the highest average
monthly electric bills ($67.07), while average electricity
bills were lowest in Oklahoma ($51.86). Arkansas households

TABLE XVIII

MEAN AGE AND SIZE OF HOUSING UNITS BY LOCATION

Location	Mean Age	Characterstics Square feet
State		
Arkansas	23.2	1403
Florida	18.8	1561
Oklahoma	27.2	1657
Virginia	30.8	1409
County Type		
Low/Low	19.2	1342
Low/High	24.9	1470
High/Low	31.8	1533
High/High	27.0	1530

TABLE XIX

MEAN AGE AND SIZE OF HOUSING UNITS
BY COUNTY TYPE WITHIN STATES

State and County Type	Mean Age	Characterstics Square feet
Arkansas		
Low/Low	21.6	1149
Low/High	14.5	1398
High/Low	36.4	1452
High/High	24.4	1530
Florida		
Low/Low	16.5	1562
Low/High	15.9	1501
High/Low	16.4	1237
High/High	21.3	1704
Oklahoma		
Low/Low	17.8	1734
Low/High	27.4	1682
High/Low	36.2	1691
High/High	27.3	1592
Virginia		
Low/Low	19.3	1207
Low/High	33.9	1431
High/Low	30.4	1621
High/High	31.5	1376

reported an average electric cost of $54.40 and Virginia respondents paid an average of $63.39 for monthly electric bills. Self-reported natural gas costs ranged from a high of $48.70 in Virginia, to a low of $23.77 in Arkansas. Oklahomans paid on the average $40.71 for monthly natural gas bills; Floridians paid almost $15.00 less, at $26.65.

Tables XX and XXI present average self-reported electricity and natural gas bills for each county type by state. Average electricity bills varied from a high of $76.72 in the High/High Florida county, to a low of $35 in Oklahoma's Low/Low county. Similarly, mean natural gas bills ranged from $5 in Florida to $50 in Virginia.

Researchers questioned whether these higher bills indicated higher energy consumption or simply reflected price differences between the areas. Therefore, it was essential to compare energy use throughout the states in terms of the actual units of energy consumed instead of the conventional method of studying monthly bills. The next section presents results of the calculation procedure discussed in Chapter three, as well as information from conversion procedures incorporated into the analysis.

Mean Rates for Energy Sources

Electric Rates The calculation procedure generated average bills based upon 1000 kWh of energy use for every county, which are presented in the last column of Table XX. These values reveal that monthly bills estimated by respon-

TABLE XX

MEAN SELF-REPORTED MONTHLY ELECTRIC BILL·
AND CALCULATED MONTHLY BILL* BY
COUNTY TYPE WITHIN STATES

State and County Type	Self-reported Monthly Bill	Calculated Monthly Bill
Arkansas		
Low/Low	$52.31	$51.49
Low/High	$64.40	$51.35
High/Low	$58.18	$49.04
High/High	$46.31	$50.55
Florida		
Low/Low	$49.59	$58.73
Low/High	$58.40	$53.66
High/Low	$69.88	$57.78
High/High	$76.72	$50.37
Oklahoma		
Low/Low	$35.48	$39.24
Low/High	$55.22	$44.65
High/Low	$53.28	$41.03
High/High	$56.11	$40.86
Virginia		
Low/Low	$73.43	$70.47
Low/High	$66.04	$61.54
High/Low	$65.62	$64.18
High/High	$58.39	$67.12

* Based on 1000 kWh use.

TABLE XXI

MEAN SELF-REPORTED MONTHLY NATURAL GAS BILL
AND CALCULATED MONTHLY BILL * BY
COUNTY TYPE WITHIN STATES

State and County Type	Self-reported Monthly Bill	Calculated Monthly Bill
Arkansas		
Low/Low	NA	NA
Low/High	$24.40	$189.88
High/Low	$14.68	$201.77
High/High	$26.59	$225.63
Florida		
Low/Low	$14.33	$362.68
Low/High	$37.00	**
High/Low	$ 5.00	**
High/High	$24.62	**
Oklahoma		
Low/Low		$207.07
Low/High	$26.90	$210.59
High/Low	$28.11	$221.81
High/High	$24.67	$253.77
Virginia		
Low/Low	NU	$373.93
Low/High	NU	$455.63
High/Low	$48.61	$373.52
High/High	$50.00	$373.52

```
 *   Based on 100 mcf use.
 **  No rates received from county.
 NA  No utility service in county.
 NU  No recorded household bills in county.
```

dents differ from the "base" bill.

The "base" bill for a county was further divided to represent the cost of a million Btu (MBtu) of electricity. The average cost per MBtu across the four states was $16.03, while this mean cost varied over each state and county type (Table XXII). The highest unit price was reported in Virginia, where one MBtu cost $19.10, almost $7 more than the lowest electricity costs in Oklahoma. Extreme variation between the mean costs of electricity was not found when viewed by county type. On the average, less than $.70 separated the high electricity cost county (Low/Low) from the low electricity cost county (High/Low).

Natural Gas Rates The program developed in this study applied similar procedures to calculate "base" natural gas bills for 100 mcf (Table XXI). The average cost for one MBtu of natural gas was considerably less than electricity, $2.98/MBtu versus $16.03/MBtu. On the average, a MBtu of natural gas cost $2.03 in Arkansas, while Virginia residents paid almost two dollars more (Table XXII). Lower income counties (Low/Low and Low /High) had higher mean natural gas costs, with $3.08 and $3.15 respectively.

Mean Use for Energy Sources

Estimated Electricity Use In order to determine the effects of price upon electricity consumption, it was neces- sary to convert the self-reported bill into number of MBtu

TABLE XXII

MEAN COST[1] OF ELECTRICITY AND NATURAL GAS BY LOCATION

Location	Electricity		Natural Gas	
	N	Mean	N	Mean
State				
Arkansas	215	14.85	179	2.03
Florida	157	15.56	17	3.53
Oklahoma	169	12.28	169	2.21
Virginia	312	19.10	312	3.92
County Type				
Low/Low	118	16.37	82	3.08
Low/High	273	15.95	226	3.15
High/Low	128	15.76	110	2.68
High/High	334	16.07	259	2.93

1   In dollars per million Btu

that the household used. For the entire sample, the average monthly electricity use was 3.83 MBtu. F-tests on the analysis of variance procedure were used to determine if a significant difference in MBtu use existed across states and county types. The results of these tests are reported in Tables XXIII and XXIV. The amount of electricity consumed by respondents differed significantly across states, at .05 level of significance, but no significant differences were seen between mean electricity use across county types.

To further clarify how electricity use in the states differed, Duncan's multiple range test for pairwise comparison was used. Results are presented in Table XXV and indicate that the average amount of energy used in Florida (4.34 MBtu) differed significantly from total electricity use in Virginia (3.31 MBtu). However, electricity use was not found to be statistically different between other states.

Estimated Natural Gas Use Results of a one-way analysis of variance between mean natural gas use and location are presented in Tables XXVI and XXVII. On the average, households in the sample consumed 25.82 MBtu of natural gas each month. Mean natural gas consumption was statistically different among states (F=2.18, p=.0906), but no statistically significant differences were found between respondents by county types. Duncan's multiple range test indicated that mean use of natural gas in Florida was statistically different from average use in the other states (Table XXVIII). However, one must be cautioned that there were

TABLE XXIII

ANALYSIS OF VARIANCE FOR MEAN USE* OF
ELECTRICITY ACROSS STATES

	DF	Sum of Squares	F	PR>F
Between States	3	131.0043	5.19	0.0016
Within States	733	6170.2228		
Corrected Total	736	6301.1271		

* In million Btu.

TABLE XXIV

ANALYSIS OF VARIANCE FOR MEAN USE* OF
ELECTRICITY ACROSS COUNTY TYPES

	DF	Sum of Squares	F	PR>F
Between County	3	32.2268	1.26	0.2878
Within County	733	6268.9004		
Corrected Total	736	6301.1271		

* In million Btu.

TABLE XXV

DUNCAN'S MULTIPLE RANGE TEST FOR MEAN USE*
OF ELECTRICITY BY LOCATION

Location	N	Mean	Duncan's[a]
State			
Florida	149	4.34	A
Oklahoma	138	4.22	AB
Arkansas	201	3.66	AB
Virginia	250	3.31	C
County Type			
Low/High	219	3.95	A
High/Low	118	3.94	A
High/High	301	3.76	A
Low/Low	100	3.30	A

a   Means with same letter are not significantly
    different.
*   In million Btu.

TABLE XXVI

ANALYSIS OF VARIANCE FOR MEAN USE[*]
OF NATURAL GAS ACROSS STATES

	DF	Sum of Squares	F	PR>F
Between States	3	284.0457	2.18	0.0906
Within States	165	7157.5772		
Corrected Total	168	7441.6229		

* In million Btu.

TABLE XXVII

ANALYSIS OF VARIANCE FOR MEAN USE[*]OF
NATURAL GAS ACROSS COUNTY TYPES

	DF	Sum of Squares	F	PR>F
Between County	3	137.3154	1.03	0.3800
Within County	165	7304.3076		
Corrected Total	168	7441.6229		

* In million Btu.

TABLE XXVIII

DUNCAN'S MULTIPLE RANGE TEST FOR MEAN USE[*]
OF NATURAL GAS BY LOCATION

Location	N	Mean	Duncan's[a]
State			
Virginia	15	13.39	A
Oklahoma	64	12.57	A
Arkansas	88	11.23	A
Florida	3	4.06	B
County Type			
Low/High	35	13.14	A
Low/Low	14	12.80	A
High/High	78	11.63	A
High/Low	42	10.62	A

a   Means with same letter are not significantly
    different.
*   In million Btu.

only three Florida households included in this analysis.

Mean Electricity Cost and Use

Table XXIX presents mean electricty costs and use for county types within each state. It also indicates whether mean use in individual counties differed significantly from one another. In order to fully explain this table, discussion focusses upon electricity use and cost within each state.

Arkansas   Electricity use in the High/High county type was statistically different from use in the Low/High county. Although households in the Arkansas High/High county had the second lowest mean electric cost in the state, they used the lowest average amount of electricity. Conversely, Low/Low county households used the second lowest amount of electricity but were faced with the highest average costs.

Florida   The lowest average level of electricity use occurred in the county with the highest mean cost for electricity (Low/Low). Households consumed more electricity in the highest income county (High/High), and had the lowest average electricity costs.

Oklahoma   There was a statistically significant difference between electricity use of households in High/High and Low/Low counties (4.69 MBtu and 4.43 MBtu, respectively). However, both counties shared similar mean electri-

TABLE XXIX

MEAN USE[1] AND MEAN COST[2] OF ELECTRICITY AND NATURAL GAS
FOR COUNTY TYPE WITHIN STATES

Location	Electricity		Natural Gas	
	Mean Use	Mean Cost	Mean Use	Mean Cost
Arkansas				
Low/Low	3.47 (AB)	15.09	NA	NA
Low/High	4.28 (A)	15.05	13.20 (A)	1.85
High/Low	4.05 (AB)	14.37	7.47 (B)	1.97
High/High	3.13 (B)	14.82	12.10 (A)	2.20
Florida				
Low/Low	2.88	17.21	*	3.53
Low/High	3.71	15.73	*	*
High/Low	4.13	16.93	*	*
High/High	5.20	14.76	*	*
Oklahoma				
Low/Low	3.08 (B)	11.50	12.81	2.02
Low/High	4.22 (AB)	13.09	13.12	2.05
High/Low	4.43 (AB)	12.03	13.02	2.16
High/High	4.69 (A)	11.98	9.98	2.47
Virginia				
Low/Low	3.56	20.65	NU	3.64
Low/High	3.66	18.04	NU	4.44
High/Low	3.49	18.81	13.37	3.64
High/High	2.97	19.67	13.75	3.64

1   In million Btu
2   In dollars per million BTU
*   Insufficient data.
NA   No utility service in county.
NU   No recorded household bills in county.

city costs, a difference of only $.48.

Virginia The highest mean electricity costs were found in the low income, low non-farm county of Virginia, while mean electricity use of these households was the second highest in the state. The lowest electricity users, High/High households with 2.97 MBtu, also faced the second highest mean electricity cost ($19.67).

Mean Natural Gas Cost and Use

Arkansas Mean natural gas use in the High/Low county of Arkansas was statistically significant from either the Low/High or High/High counties. Highest mean costs were found in the High/High county, but mean use for households in this county did not have substantially lower use, compared with the Low/High county type.

Florida Due to lack of sufficient data, Florida households were not included in the calculations of mean use.

Oklahoma Highest mean natural gas costs and lowest mean natural gas use were found in the High/High county in Oklahoma. Although households in the Low/Low county had lower average natural gas costs ($2.02/MBtu), they consumed less natural gas than counties with higher costs.

Virginia Only two counties contained households with natural gas bills, High/Low and High/High counties. Average

gas costs were the same for households in both counties

($3.64 /MBtu) and mean use was also very similar (13.37 MBtu

and 13.75 MBtu).

Statistical Results by Objective

The remainder of this chapter discusses results based

upon the objectives outlined in Chapter one.

Objective 1

> To compare self-reported monthly use in MBtu with aver-
> age utility rates per MBtu for each energy source and
> assess the impact of rates upon estimated monthly use.

In order to address this objective effectively, the

following null hypothesis was developed:

> Ho: There is no significant correlation between utility
> rates and estimated monthly use.

Pearson's product moment correlation analysis was used

to test this hypothesis. Results indicate that a signifi-

cant negative relationship (r= -.12811, p= .0005) existed

between electricity rates and use, which implies that as

cost per MBtu increased, household electricity consumption

decreased. However, a similar relationship was not found to

be significant for natural gas users.

Although a significant relationship was found between

mean use and mean cost for electricity for all households,

it occurred only for one state (Florida) and one county type

(High/High) when households were limited by location (Table

XXX). In addition, the correlation of use and natural gas cost in High/High counties indicates a significant relationship existed. It is the absence of significant relationships that is important in this analysis. Regardless of theoretical economic demand, higher prices in most areas of the region did not reflect significantly lowered consumption. In fact, the positive coefficients may suggest that, for many areas, higher prices may parallel higher use.

Objective 2

> To assess the impact of average utility rates per MBtu upon expressed energy concern.

For this objective, energy concern (attitudes) became the dependent variable. One-hundred and fifty respondents, roughly 17.5 percent of the sample, were classified as high energy concern households. Table XXXI displays the distribution of these individuals across states as well as county types. Fewer high energy concern households were found in Oklahoma than any other state (27), while high/low counties recorded the smallest number of high energy concern respondents (18).

The analysis first attempted to determine whether the actual distribution of energy-related attitudes across location differed from the normal distribution. A Chi-square coefficient was calculated for attitudes by state and by county type. A significant association was observed between state and attitude (Chi-square=15.792, df=3, p=.0013),

TABLE   XXX

CORRELATION COEFFICIENT BETWEEN MEAN USE[1] AND MEAN COST[2]
FOR ELECTRICITY AND NATURAL GAS BY LOCATION

Location	Electricity		Natural Gas	
State				
Arkansas	.00575	(201)	.12475	(88)
Florida	-.15941*	(149)	**	**
Oklahoma	.05706	(138)	-.13824	(64)
Virginia	-.09794	(249)	**	**
County Type				
Low/Low	.07603	(100)	-.17377	(15)
Low/High	-.10359	(218)	-.00632	(35)
High/Low	-.10355	(118)	.36341*	(42)
High/High	-.18443*	(301)	-.04711	(78)

1   In million BTU
2   In dollars per million BTU
*   Significant at .05 level.
** Insufficient responses for correlation.

while the distribution of attitudes by county type was not

significantly different from the sample distribution.

TABLE XXXI

PERCENT OF HIGH ENERGY CONCERN
RESPONDENTS BY LOCATION

Location	N	Percent *
State		
Arkansas	37	24.7
Florida	44	29.3
Oklahoma	27	18.0
Virginia	42	28.0
County Type		
Low/Low	26	17.3
Low/High	54	36.0
High/Low	18	12.0
High/High	52	34.8

* Percent of high concern (i.e., 24.7%
  of Arkansas respondents were high
  concern.

An F-test from the analysis of variance tested whether

average utility costs for electricity and natural gas varied

between high and low energy concern respondents. As noted

in Table XXXII, a significant difference existed between electric costs incurred by high and low energy conscious respondents (F=5.56, p=.0186). The mean electric cost for high energy concern respondents was $15.56 per million Btu, versus $16.13 for low energy concern households.

TABLE XXXII

ANALYSIS OF VARIANCE OF ELECTRICITY COSTS AND
ENERGY CONCERN FOR TOTAL SAMPLE

	DF	Sum of Squares	F	PR>F
Between Groups	1	39.6380	5.56	0.0186
Within Groups	851	6068.5423		
Corrected Total	852	6108.1803		

Similar results were not found when natural gas costs were considered. Table XXXIII presents results of an F-test between energy concern and natural gas costs. It reveals that no significant difference existed between gas costs of energy attitude subgroups (F=.03, p=.8633). The average price per MBtu of natural gas was approximately $2.98 for both high and low energy concern groups. These results may be affected by scarce number of valid responses.

TABLE XXXIII

ANALYSIS OF VARIANCE OF NATURAL GAS COSTS AND
ENERGY CONCERN FOR TOTAL SAMPLE

	DF	Sum of Squares	F	PR>F
Between Groups	1	0.0262	.03	0.8633
Within Groups	675	597.7369		
Corrected Total	676	597.7631		

Additional tests were also run to determine if the mean costs faced by attitude groups were significantly different when viewed within states or county types. F-values from an analysis of variance of electricity costs within states are presented in Table XXXIV. Oklahoma and Virginia respondents incurred significantly different per MBtu costs based upon level of energy concern (F=6.48, p=.0118, and F=19.42, p=.0001, respectively). In Oklahoma, the mean electricity cost of high concern households was $12.02 and $12.33 for low concern households (Table XXXV). High concern groups in Virginia had lower electricity costs than low concern groups, $18.54 versus $19.19.

Average natural gas costs were also statistically significant between energy concern groups in Virginia and Oklahoma (Table XXXVI). The F-value of 3.68 in Oklahoma was significant at .0568, while an F-value of 19.37 calculated

for Virginia respondents was significant to the .0001 level. Table XXXVII shows the mean natural gas cost for each energy concern group. Oklahoman's with high energy concern faced lower natural gas costs than other respondents, $2.14/MBtu versus $2.22/MBtu. The 42 high energy concern respondents in Virginia had mean natural gas costs of $4.15/MBtu, while low energy concern groups had a significantly lower mean cost of $3.88/MBtu.

TABLE XXXIV

ANALYSIS OF VARIANCE OF ELECTRICITY COSTS
AND ENERGY CONCERN WITHIN STATES

	DF	Sum of Squares	F	PR>F
Arkansas				
Between Groups	1	0.0396	.63	0.4286
Within Groups	213	13.4192		
Corrected Total	214	13.4588		
Florida				
Between Groups	1	0.1619	.19	0.6601
Within Groups	155	129.2674		
Corrected Total	156	129.4293		
Oklahoma				
Between Groups	1	2.2632	6.48	0.0118
Within Groups	167	58.3175		
Corrected Total	168	60.5807		
Virginia				
Between Groups	1	15.2264	19.42	0.0001
Within Groups	310	243.0612		
Corrected Total	311	258.2876		

TABLE XXXV

MEAN ELECTRIC COSTS AND SIGNIFICANCE BETWEEN
ENERGY CONCERN GROUPS STATE

State	Mean Electric Costs			
	High Concern		Low Concern	
Arkansas	$14.82	(37)	$14.85	(178)
Florida	$15.51	(44)	$15.59	(113)
Oklahoma *	$12.02	(27)	$12.33	(142)
Virginia *	$18.54	(42)	$19.19	(270)

* Means between groups are significantly
  different at .05 level.

TABLE XXXVI

ANALYSIS OF VARIANCE OF NATURAL GAS COSTS AND
ENERGY CONCERN WITHIN STATES *

	DF	Sum of Squares	F	PR>F
Arkansas				
Between Groups	1	0.0017	.07	0.7944
Within Groups	177	4.3638		
Corrected Total	178	4.3654		
Oklahoma				
Between Groups	1	0.1397	3.68	0.0568
Within Groups	167	6.3401		
Corrected Total	168	6.4798		
Virginia				
Between Groups	1	2.6613	19.37	0.0001
Within Groups	310	42.5879		
Corrected Total	311	45.2493		

* Only 1 Florida county had natural gas cost information
so comparisons could not be made.

TABLE XXXVII

MEAN NATURAL GAS COSTS AND SIGNIFICANCE BETWEEN
ENERGY CONCERN GROUPS BY STATE *

State	Mean Natural Gas Costs			
	High Concern		Low Concern	
Arkansas	$ 2.02	(30)	$ 2.03	(149)
Oklahoma	$ 2.14	(27)	$ 2.22	(142)
Virginia **	$ 4.15	(42)	$ 3.88	(270)

* Only 1 Florida county had natural gas cost
information so comparisons could not be made.

** Means between groups are significantly
different at .05 level.

When respondents were grouped by county type, a signi-
ficant difference in mean electricity and natural gas costs
was found between high and low energy concern groups in both
low income counties (Low/Low and Low/High). Table XXXVIII
presents results of the F-test from an analysis of variance
for electricity costs and energy concern in each county
type. The F-value for Low/Low counties (F=17.64) was sig-
nificant to the .0001 level, while the results proved signi-
ficant to .0235 for Low/High respondents.

TABLE XXXVIII

ANALYSIS OF VARIANCE OF ELECTRICITY COSTS AND
ENERGY CONCERN GROUPS WITHIN COUNTY TYPES

	DF	Sum of Squares	F	PR>F
Low/Low				
Between Groups	1	185.9456	17.64	0.0001
Within Groups	116	1222.4961		
Corrected Total	117	1408.4416		
Low/High				
Between Groups	1	18.6628	5.19	0.0235
Within Groups	271	974.2420		
Corrected Total	272	992.9049		
High/Low				
Between Groups	1	5.4682	.78	0.3780
Within Groups	126	880.3500		
Corrected Total	127	885.8176		
High/High				
Between Groups	1	20.5790	2.46	0.1176
Within Groups	332	2775.6524		
Corrected Total	333	2796.2314		

Mean electric costs incurred by county type are found in Table XXXIX. Respondents in Low/Low counties with low energy concern paid nearly $5.00 more per MBtu of electricity than respondents who expressed high concern over the impact of the energy crisis. However, Low/High respondents paid, on the average, more for electricity when they expressed high energy concern.

TABLE XXXIX

MEAN ELECTRIC COSTS AND SIGNIFICANCE BETWEEN
ENERGY CONCERN GROUPS BY COUNTY TYPE

| County Type | Mean Electric Costs | |
	High Concern	Low Concern
Low/Low *	$14.05 (26)	$17.03 (92)
Low/High *	$16.48 (54)	$15.82 (219)
High/Low	$15.85 (18)	$15.25 (110)
High/High	$15.49 (52)	$16.18 (282)

* Means between groups are significantly
different at .05 level.

Similar results were found for natural gas costs when studied by energy concern. Results of the analysis of variance are presented in Tables XL and mean natural gas costs are listed in Table XL. Respondents in low income

counties had significantly different mean natural gas costs when viewed in terms of their energy concern. This association proved significant to .0006 for Low/Low respondents (F=12.94), and to .0233 for Low/High respondents (F=5.22). As with electric costs, high energy concern respondents in Low/Low counties paid less per MBtu of natural gas than low concern respondents. In contrast, households in Low/High counties with low energy concern paid almost $.50 less than their counterparts.

TABLE XL

ANALYSIS OF VARIANCE OF NATURAL GAS COSTS AND
ENERGY CONCERN GROUPS WITHIN COUNTY TYPES

	DF	Sum of Squares	F	PR>F
Low/Low				
Between Groups	1	6.4026	12.94	0.0006
Within Groups	80	39.5719		
Corrected Total	81	45.9745		
Low/High				
Between Groups	1	7.9841	5.22	0.0233
Within Groups	224	342.9003		
Corrected Total	225	350.8844		
High/Low				
Between Groups	1	1.2868	2.10	0.1505
Within Groups	108	66.2742		
Corrected Total	109	67.5611		
High/High				
Between Groups	1	.5622	1.25	0.2636
Within Groups	257	115.1251		
Corrected Total	258	115.6873		

TABLE XLI

MEAN NATURAL GAS COSTS AND SIGNIFICANCE BETWEEN
ENERGY CONCERN GROUPS BY COUNTY TYPE

County Type	Mean Natural Gas Costs			
	High Concern		Low Concern	
Low/Low *	$ 2.58	(19)	$ 3.24	(63)
Low/High *	$ 3.54	(42)	$ 3.06	(184)
High/Low	$ 2.42	(16)	$ 2.76	(94)
High/High	$ 2.80	(29)	$ 2.95	(230)

* Means between groups are significantly
  different at .05 level.

Objective 3

        To determine whether a linear relationship exists
between annual household income and average costs per
MBTU of energy.

The null hypothesis for this objective is as follows:

      Ho: There is no significant correlation between family
            income and calculated cost per MBTU.

This null hypothesis was rejected for natural gas based
upon results of Pearson product moment correlation analysis.
A significant positive relationship (r=.08653, p=.0374) ex-
isted between income and natural gas cost, but there was no
significant relationship between income and electric cost.
Table XLII provides results from Pearson correlation test
when analysis allowed for comparisons between income and
costs within states and county types. These figures indi-
cate that only two coefficients were significant at the .05
level, electricity costs in Virginia and natural gas costs
in Oklahoma.

This table also provides coefficients and corresponding
significance levels by county type. Only one correlation
coefficient for electricity costs and income proved insigni-
ficant at the .05 level; however, three others were signifi-
cant at .10 level. The correlation coefficient is positive
for Low/Low and Low/High counties, implying that higher
income households faced higher average electric costs. The
negative coefficient for High/High county suggests that
average electricity costs rose as income decreased.

TABLE XLII

CORRELATION COEFFICIENTS BETWEEN INCOME AND COST *
OF NATURAL GAS AND ELECTRICITY BY LOCATION

Location	Electricity			Natural Gas		
	N	R	P	N	R	P
State						
Arkansas	(191)	-.02758	.7049	(156)	-.01955	.8086
Florida	(145)	-.10632	.2031	NA	NA	NA
Oklahoma	(133)	.00637	.9420	(133)	.16693	.0548
Virginia	(273)	-.13706	.0235	(273)	.10681	.0781
County Type						
Low/Low	(112)	.22198	.0187	(77)	.16772	.1448
Low/High	(237)	.10692	.1006	(193)	.11239	.1197
High/Low	(118)	.13006	.1604	(100)	.24387	.0145
High/High	(275)	-.17300	.0040	(209)	-.11936	.0852

* In dollars per million Btu.

Objective 4

To determine whether a linear relationship exists
between average costs per MBtu of energy and percen-
tage of monthly income devoted to energy bills.

The hypothesis that was developed to facilitate statis-
tical analysis of this data was as follows:

Ho: There is no significant correlation between mean
energy costs and percent of income devoted to
utility payments.

Pearson's product moment correlation was used for this analysis, as both variables are at least interval data. Table XLIII provides the results of this correlation procedure.

When the correlation is studied within states, only Arkansas natural gas costs were significantly correlated to the ratio of income to utility bills. However, all coefficients within county types were significant at the .05 level, with the exception of Low/Low counties. Both electricity and natural gas costs were positively correlated with this ratio, suggesting that households who expend higher proportions of income for utility payments also face higher electric and/or natural gas costs.

TABLE XLIII

CORRELATION COEFFICIENTS BETWEEN INCOME : UTILITY COST
RATIO AND MEAN COST OF ELECTRICITY AND NATURAL GAS

Location	Electricity			Natural Gas		
	N	R	P	N	R	P
State						
Arkansas	(191)	.09285	.2014	(156)	.18571	.0203
Florida	(145)	-.07395	.3767	NA	NA	NA
Oklahoma	(133)	-.07445	.3944	(133)	-.10962	.2091
Virginia	(273)	.04537	.4553	(273)	.00362	.9525
County Type						
Low/Low	(112)	-.07411	.4374	(77)	-.11187	.3327
Low/High	(237)	.17741	.0062	(193)	.21777	.0023
High/Low	(118)	.27146	.0029	(100)	.26014	.0090
High/High	(275)	.29160	.0001	(209)	.26943	.0001

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of the present study was to understand the impact of electricity and natural gas costs upon residential energy use via consumer attitudes. Specifically, the research was planned around the following five objectives: (1) to develop and validate a computer procedure designed to calculate average utility rates for a single county; (2) to compare self-reported monthly use with average utility rates and assess the relationship between rates and use; (3) to assess the impact of average utility rates upon general energy-related attitudes; (4) to determine whether a linear relationship exists between family income and calculated utility costs; and (5) to determine whether a linear relationship exists between calculated utility costs and percentage of monthly income consumed by energy bills.

Description of Respondents

Data used in this study were obtained from the Southern Regional Housing Research Project S-141, "Housing for Low- and Moderate-Income Families." A total of 853 respondents

112

comprised the sample, which was drawn from non-farm, non-metropolitan counties in Arkansas, Florida, Oklahoma, and Virginia. Mean age of male and female household heads was 51 years. On the average, these householders possessed slightly more than an eleventh grade education. The primary occupation for male householders was craftsman or operator, while most women held sales or clerical jobs. At least 20 percent of both male and female heads held professional or semi-professional jobs.

Household size ranged from one to seven members, with a mean size of 2.6 members. Respondents earned mean annual incomes of $15,500, and spent approximately 8.5 percent of take home pay to meet monthly heating, cooling and lighting requirements. More than half of the respondents lived in homes built prior to the energy crisis, with a mean dwelling age of 26 years. Housing unit size varied from 800 square feet to more than 3000 square feet, but the average house size in the counties sampled was slightly over 1480 square feet. In terms of energy consciousness, less than 20 percent of the respondents believed in the energy crisis, and agreed that the energy situation affected their housing decisions.

In addition to household data, the study relied upon utility rate schedules of more than 50 public, private, or cooperative utility companies. These schedules were secured either through the Public Utility Regulatory Commission in each state, the company itself, or a combination of these

methods. Although the type of rate schedule was not a com-
ponent of this analysis, most electric and natural gas rate
rate schedules reflected decreasing block pricing, wherein a
higher per unit cost is charged for beginning blocks of use,
with subsequent blocks reduced. Several flat, or propor-
tional, rates were involved in this research and were more
commonly associated with natural gas companies.

Summary of Findings

To summarize the results of the study, it will help to
view them in relation to the questions outlined in Chapter I.

<u>Are some households forced into using less energy due to
high utility bills</u> ?

This question touches upon the basic idea of elasti-
city, that consumption will decrease as price increases. At
first glance, results support this theory, since a signifi-
cant negative Pearson's Correlation Coefficient was gener-
ated for the entire sample ($r= -.12811$, $p=.0005$). It indi-
cated that areas with higher electricity prices experienced
lower levels of usage.

However, when correlation coefficients were viewed in
terms of price and use across states or county types, this
relationship did not remain statistically significant for
all cases. This absence of significant relationships may
suggest that for certain types of counties or states (i.e.,
low-income, non-metropolitan), basic economic theory should
be re-evaluated if it is to fully explain energy/price re-

action of rural, non-farm consumers. For many households in
the sample, higher prices did not reflect significantly
lower consumption.

<u>Do households in areas with high utility bills express
greater belief in the energy crisis than households in areas
with lower utility costs ?</u>

Numerous studies have shown that general energy atti-
tudes held by individuals contribute very little to differ-
ences between energy use, but how did attitudes differ when
considered in view of the price paid for power or fuel ?
Results from this study revealed a significant difference
between energy costs of households with high energy con-
sciousness versus those households with lower energy con-
sciousness (F=5.56, p=.0156). On the average, high energy
concern households paid significantly lower electricity
bills than other households ($15.56 versus $16.13). Natural
gas prices did not differ significantly between these two
groups. This relationship suggests that households with
lower energy costs expressed greater belief in the energy
crisis and in its impact upon their housing decisions.

Higher average electric and natural gas costs were
found in Virginia. In both cases, a significant difference
existed between average costs incurred by high and low
energy concern respondents. However, high prices did not
always reflect high energy concern. As a matter of fact,
electricity costs for low concern respondents were signifi-
cantly higher than the costs for high energy conscious res-

pondents. The opposite situation occurred for natural gas, where low attitude respondents faced lower bills. Perhaps one rationalization for these conflicting results is that residents who believed in the energy crisis and perceived the crisis as severe received natural gas from cooperatively owned utility companies. Their "stock" in such companies may create more positive attitudes even though utility costs were substantially higher for households serviced by the cooperatives included in this study. Electric companies in Virginia were frequently investor-owned. Respondents may perceive their bills to be higher than they actually are, because they do not think that the IOU is concerned with their welfare. Thus negative feedback or perceived lack of concern by the electric companies may cause these consumers to believe the "crisis" was simply concocted by private utility companies as a means to raise electric rates.

Do high income families live in areas with lower utility bills that low-income families ?

Through the results of this project, this question can be answered in two opposing ways. Both negative and positive correlations were found between electricity costs and income when households were divided by county type. In low-income counties, electricity costs tended to rise with income. In High/High counties, lower income residents faced significantly higher electric prices.

Do families that spend large proportions of their income on

energy <u>live</u> <u>in</u> <u>areas</u> <u>with</u> <u>high</u> <u>utility</u> <u>rates,</u> <u>or</u> <u>in</u> <u>counties</u> <u>with</u> <u>low</u> <u>rates</u> <u>?</u>

As stated earlier in this chapter, the average percentage of household income devoted to utility payments was 8.5 percent for all households. Virginians pay, by far, a higher percentage of monthly take home pay for utility bills. Electric rates, as well as natural gas rates, were also significantly higher in Virginia than in other states. These findings may support the belief that bills for electricity and natural gas consume larger portions of monthly budgets when price is higher.

Evaluation of Methods and Procedures

To improve further studies on this topic, it is necessary to critically analyze the present study in terms of methods and procedures employed. The following discusses the calculation procedure and offers suggestions for improving its results.

<u>The</u> <u>Average</u> <u>County</u> <u>Bill</u>

<u>Overview</u> One of the objectives of this study was to develop and validate a procedure to convert utility rate schedules into comparative monthly electric and natural gas bills. The final procedure handles four electric companies per county and three natural gas companies. Within an individual company, the program has the capacity to manage five rate periods for electricity and three natural gas rate per-

iods. Inside each rate period, seven blocks can be processed for natural gas bills and five blocks are included for electricity rates. The final level of rates that the program was designed to consider is the presence of seasonal rates, such as Summer and Base (Winter) months. Several special adjustment costs were also incorporated into the procedure, including monthly fuel adjustment costs, temporary riders, and percentage of final bill.

Average bills for 1000 kWh of electricity and 100 mcf of natural gas were calculated for each county. Unit costs ($/kWh and $/mcf) were converted into costs per million Btu (MBtu). From this value, self-reported bills were converted into average use in MBtu, and comparisons were made based upon these figures. The remaining analysis utilized calculated mean use in MBtu and mean cost in $/MBtu.

The basic premise behind this calculation procedure is that attitudes and energy use of individuals in a specified area are normally restricted by the company rates in effect for the county, city, or other boundary. Households are not able to select a utility based upon its rate schedule since company service areas are restricted either by a state PURC or city / county boundaries. Therefore, to a large degree, rates are not strictly independent data, but dependent upon the county, or location within the county, in which the household lives.

This procedure has merit when self-reported data cannot be validated through regular channels (i.e., actual utility

bills, special meter readings). In addition, when studies rely upon large areas for data collection, such as the case in the present research, a simplified method of estimating energy use is warranted. It must also be noted that limitations and other considerations surround use of average utility costs calculated in this manner. Two of these factors relate to selecting statistical procedures and estimating energy consumption from self-reported bills.

Statistical Considerations   Close attention should be paid when selecting statistical procedures and caution must be exercised when making inferences about the results. The statistical procedure selected to analyze average county rates can not require between-subject data, because rates remain constant for all respondents within a single county and vary only from area to area. In addition, estimated energy consumption for all respondents depends upon this average county cost, regardless of what company provided power or fuel to a home.

Adjust Base Use   The most crucial adjustment needed in the procedure concerns the "base" (i.e., kWh or mcf) upon which the average utility costs are estimated. The present procedure uses 1000 kWh and 100 mcf as average monthly consumption levels. Although electricity consumption was relatively consistent with this base use, natural gas usage fell far below the base of 100 mcf. The effect of this over-estimation of use can have two distinctly different results.

The first result is an over-estimation of the number of MBtu consumed by the household. Such results are due to the underlying basis of decreasing block rate structures. Lower gas and electric users are charged higher average unit costs for consuming smaller amounts of energy. To illustrate the effect of this "base" consumption level, a family with a 100 MCF bill would pay an average of $1.55/mcf. On the other hand, if a household used 25 MCF, they would be charged an average of $1.67/mcf. A second feasible result would take the opposite form. If the rate structure was a progressive or inverted block rate structure, the family could sustain higher bills than normal for low amounts of use.

In order to alleviate much of this discrepancy, the program should be modified to provide three levels of use, low, medium and high. These three classes of bills would be compared with self-reported bills to determine whether the person is a high, low or medium user of energy. This procedure would reflect variations in average costs at different blocks. By using such a variable model, estimated use could more accurately reflect actual consumption.

Recommendations for Further Research

Future analysis should consider several factors that could significantly influence the validity and reliability of these results.

1. First, additional characteristics of the respondents should be incorporated into the analysis. Relevant

factors may include knowledge level of energy conservation, decision-making practices, and acceptance of energy conservation practices.

2. Second, previous studies indicate that energy use is affected by structural features in addition to size and age, such as type of unit, presence of energy-saving features, tenure choice, and basic dwelling quality. Since these features may influence attitudes of household members or may severely limit the household's ability to conserve energy, future study should control for these and other structural characteristics.

3. Third, household energy requirements is another extraneous factor to incorporate into future studies. Different levels of energy requirements impact the amount of electricity or natural gas needed each month. For example, the type of water heating or primary source of heating and cooling could strengthen or weaken relationships reported in this study. By considering a household's energy "need," other significant associations not found during the present research may arise.

4. Fourth, this researcher recommends that closer attention be given to lifestyles and other psychographic information when explaining energy use. Although previous research suggests limited influence of energy-related attitudes upon energy consumption, profiles of high energy user could be developed to explain variations in levels of use.

5. Fifth, further research should study variation between price and energy consciousness in terms of the type of company that services the area. In addition, price comparisons between company types is needed.

6. Sixth, some households realized utility bills that composed more than 20 percent of their monthly income. The characteristics of these households is needed if policy actions are to meet their needs.

Concluding Statement

It was hoped that this study would lay the groundwork for future analysis of the impact of prices upon attitudes and subsequently energy use. While the socio-behavioral side has been overlooked by economic studies of price and energy use, the economic side of price and demand has been shunned by research from sociological perspective. The two seemingly opposing "forces" must be combined if society is to fully understand how and why consumers use, or abuse, energy. The methodology designed in this study may establish a framework upon which to merge these two idealogically different fields.

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APPENDIXES

APPENDIX A

METHOD FOR CALCULATING AVERAGE MONTHLY

ELECTRIC AND NATURAL GAS BILLS

FROM RATE SCHEDULES

This appendix explains procedures for coding and mani-
pulating rate information to calculate average electricity
and natural gas bills. It also explains specific formulas
used in the model.

Coding

Since average utility costs were needed for each coun-
ty, electricity and natural gas rate information for one of
the 16 counties comprised a single record. Each record
consisted of 79 cards, distributed between electricity and
natural gas as follows: electricity on cards 1-52 and natu-
ral gas on cards 53-79.

The computer program allowed a maximum of four electric
companies and three natural gas companies per county. Thir-
teen cards were used to store information for each electric
company, and nine cards were provided for each natural gas
company. Table XLIV locates company information by card.

Card Layout

The first card for each company contained general in-
formation, including name of company, beginning and ending
of seasonal rates (when applicable), number of rate periods
in 1980, and special cost adjustments. The second card for
each company contained utility cost adjustments for each

month, as well as a method of determining when fuel credits were made. The third card in a series provided information pertinent to each rate period (i.e., month and day rate period began and ended, and customer charge where applicable). The program was designed to handle five rate periods per electric company, and three rate periods per natural gas company. For each rate period, two cards were supplied to record actual rates for summer and base months when appropriate. Each of these cards included lengths and unit costs for a maximum of five electricity blocks and seven natural gas blocks. Tables XLV and XLVI outline contents of both electricity and natural gas series.

TABLE XLIV

LOCATION OF ELECTRICITY AND NATURAL GAS
COMPANY INFORMATION BY CARD

Company Type	Card Numbers
Electricity	
1	1-13
2	14-26
3	27-39
4	40-52
Natural Gas	
1	53-61
2	62-70
3	71-79

TABLE XLV

CONTENTS OF THIRTEEN CARDS IN ELECTRICITY SERIES

Card	Contents
First Card	Company Name Effective Months of Season Number of Rate Periods Special Adjustments
Second Card	Monthly Fuel Adjustment Costs FA Credits
Third Card	Effective Dates of Rate Period Customer Charge per Rate Period
Fourth Card	Block Length and Unit Cost for Base Season (Rate Period 1)
Fifth Card	Block Length and Unit Cost for Summer Season (Rate Period 1)
Sixth Card	Block Length and Unit Cost for Base Season (Rate Period 2)
Seventh Card	Block Length and Unit Cost for Summer Season (Rate Period 2)
Eighth Card	Block Length and Unit Cost for Base Season (Rate Period 3)
Ninth Card	Block Length and Unit Cost for Summer Season (Rate Period 3)
Tenth Card	Block Length and Unit Cost for Base Season (Rate Period 4)
Eleventh Card	Block Length and Unit Cost for Summer Season (Rate Period 4)
Twelfth Card	Block Length and Unit Cost for Base Season (Rate Period 5)
Thirteenth Card	Block Length and Unit Cost for Summer Season (Rate Period 5)

TABLE XLVI

CONTENTS OF NINE CARDS IN NATURAL GAS SERIES

Card	Contents
First Card	Company Name Effective Months of Season Number of Rate Periods Unit of Block Cost Special Adjustments
Second Card	Monthly Purchase Gas Adjustment Costs PGA Credits
Third Card	Effective Dates of Rate Period Customer Charge per Rate Period
Fourth Card	Block Length and Unit Cost for Base Season (Rate Period 1)
Fifth Card	Block Length and Unit Cost for Summer Season (Rate Period 1)
Sixth Card	Block Length and Unit Cost for Base Season (Rate Period 2)
Seventh Card	Block Length and Unit Cost for Summer Season (Rate Period 2)
Eighth Card	Block Length and Unit Cost for Base Season (Rate Period 3)
Ninth Card	Block Length and Unit Cost for Summer Season (Rate Period 3)

Calculation Formulas for
Average Company Bill

The average company bill was composed of the following three primary components: (1) average monthly generating costs, (2) average monthly utility cost adjustments, and (3) average monthly special adjustments. The relationship among these three components in determining a mean bill can be summarized by the following formula:

$$COMBILL = GENCOSTS + UTLTYADJ + SPECIAL$$

where :

    COMBILL   = average monthly bill for company
    GENCOSTS = average monthly generating costs
    UTLTYADJ = average monthly utility adjustments
    SPECIAL   = average monthly special adjustments

The following discussion explains how these components were calculated.

Average Monthly Generating Costs

Generating costs consisted of the capacity charge and customer service charge (CC). For the present calculations, monthly bills were based upon average usage amounts of 1000 kWh for electricity and 100 mcf for natural gas. The basic formula for calculating this first component is

$$GENCOSTS = \frac{\sum_{i=1}^{n} RPBILL_i \times N_i}{365}$$

where :

n = number of rate periods for year

$RPBILL_i$ = average bill for entire rate period

N_i = number of days in each rate period

Rate Period Bill (RPBILL) If the rate period included only base months, then the rate period bill equals the base (winter) rate period bill, as illustrated by the following:

$$RPBILL_i = WRPBILL_i$$

As explained in Chapter 3, the rate period may have included both summer and base months. Therefore, the average rate period bill was weighted between base and summer bills, depending upon the length of time that the seasonal rate was in effect during the rate period. The following equation addresses seasonal rates :

$$RPBILL_i = \frac{(WRPBILL_i \times NWDRP_i) + (SPRBILL_i \times NSDRP_i)}{TNDRP_i}$$

where :

$WRPBILL_i$ = average bill from base (winter) rates

$NWDRP_i$ = number of days base rates in effect

$SRPBILL_i$ = average bill from summer rates

$NSDRP_i$ = number of days summer rates in effect

$TNDRP_i$ = total number of days in rate period

<u>Customer</u> <u>and</u> <u>Capacity</u> <u>Charges</u> To calculate a rate period bill (whether for summer or winter seasons), monthly customer and capacity charges were combined. Capacity charge is the sum of rates for each block in the period. It is found by multiplying the block length by the block unit, as shown in the formula below:

$$WRPBILL_i = \left[\sum_{i=1}^{n} [BLKLENG_i \times BLKCOST_i] \right] + CUSTCHG_i$$

where:

n = number of blocks in rate period

$BLKLENG_i$ = number of kWh, mcf of ccf in block

$BLKCOST_i$ = cost per unit of consumption in block

$CUSTCHG_i$ = monthly customer service charge.

<u>Average</u> <u>Monthly</u> <u>Utility</u> <u>Adjustments</u>

The second component of average company bills is the utility adustment cost (e.g., fuel adjustment or purchase gas adjustment). Twelve monthly adjustments were added for each company, then the mean adjustment was calculated. The following formula was used:

$$UTLTYADJ = \left[\frac{\sum_{i=1}^{12} UCA_i}{12} \right]$$

APPENDIX B

STATISTICAL ANALYSIS SYSTEM PROGRAM

FOR UTILITY BILL CALCULATIONS

NOTE: THE JOB U15387A2 HAS BEEN RUN UNDER RELEASE 82:4 OF SAS AT OKLAHOMA STATE UNIVERSITY (01354001).

NOTE: SAS OPTIONS SPECIFIED ARE:
      SORT=4

```
1           DATA RATES.CALC; SET SAS.RATES;                                    00000130
2           ************** CREATE ARRAYS FOR MULTI-LEVEL VARIABLES **********; 00000150
3           *****  CREATE ARRAYS FOR ELECTRICITY VARIABLES  *****;             00000160
4           ***** INFORMATION ACROSS 4 COMPANIES (I=1,4) *****;                00000170
5           ** GENERAL INFORMATION FROM CARD #1 **;                            00000180
6           ARRAY FUELTYPE (I) V1003 V2003 V3003 V4003;                        00000190
7           ARRAY COMPNUM (I) V1004 V2004 V3004 V4004;                         00000200
8           ARRAY NODATA (I) V1005 V2005 V3005 V4005 ;                         00000210
9           ARRAY COMPNAME (I) $ V1006 V2006 V3006 V4006;                      00000220
10          ARRAY SUMBEG (I) V1007 V2007 V3007 V4007  ;                        00000230
11          ARRAY SUMEND (I) V1008 V2008 V3008 V4008  ;                        00000240
12          ARRAY WINBEG (I) V1009 V2009 V3009 V4009 ;                         00000250
13          ARRAY WINEND  (I) V1010 V2010 V3010 V4010;                         00000260
14          ARRAY NUMRP (I) V1011 V2011 V3011 V4011;                           00000270
15          ARRAY RIDER (I) V1012 V2012 V3012 V4012;                           00000280
16          ARRAY RIDERBEG (I) V1013 V2013 V3013 V4013;                        00000290
17          ARRAY RIDEREND (I) V1014 V2014 V3014 V4014;                        00000300
18          ARRAY DCUSTCHG (I) V1017 V2017 V3017 V4017;                        00000310
19          **** INFORMATION FROM CARD #2 ****;                                00000320
20          ** MONTHLY FUEL ADJUSTMENT COSTS ACROSS COMPANIES **;              00000330
21          ARRAY FAJAN (I) V1025 V2025 V3025 V4025;                           00000340
22          ARRAY FAFEB (I) V1026 V2026 V3026 V4026;                           00000350
23          ARRAY FAMAR (I) V1027 V2027 V3027 V4027;                           00000360
24          ARRAY FAAPR (I) V1028 V2028 V3028 V4028;                           00000370
25          ARRAY FAMAY (I) V1029 V2029 V3029 V4029;                           00000380
26          ARRAY FAJUN (I) V1030 V2030 V3030 V4030;                           00000390
27          ARRAY FAJUL (I) V1031 V2031 V3031 V4031;                           00000400
28          ARRAY FAAUG (I) V1032 V2032 V3032 V4032;                           00000410
29          ARRAY FASEP (I) V1033 V2033 V3033 V4033;                           00000420
30          ARRAY FAOCT (I) V1034 V2034 V3034 V4034;                           00000430
31          ARRAY FANOV (I) V1035 V2035 V3035 V4035;                           00000440
32          ARRAY FADEC (I) V1036 V2036 V3036 V4036;                           00000450
33          ** FUEL ADJUSTMENT CREDIT CODES ACROSS COMPANIES **;               00000460
34          ARRAY FACR1 (I) $ V1037 V2037 V3037 V4037;                         00000470
35          ARRAY FACR2 (I) $ V1038 V2038 V3038 V4038;                         00000480
36          ARRAY FACR3 (I) $ V1039 V2039 V3039 V4039;                         00000490
37          ARRAY FACR4 (I) $ V1040 V2040 V3040 V4040;                         00000500
38          **** INFORMATION FROM CARD #3 ****;                                00000510
39          ** EFFECTIVE DATES AND SERVICE CHARGE ACROSS COMPANIES **;         00000520
40          ** FOR RATE PERIOD 1 **;                                           00000530
41          ARRAY MRPBEG1 (I) V1045 V2045 V3045 V4045;                         00000540
42          ARRAY DRPBEG1 (I) V1046 V2046 V3046 V4046;                         00000550
43          ARRAY MRPEND1 (I) V1047 V2047 V3047 V4047;                         00000560
44          ARRAY DRPEND1 (I) V1048 V2048 V3048 V4048;                         00000570
45          ARRAY CUSTCHG1 (I) V1049 V2049 V3049 V4049;                        00000580
46          ** FOR RATE PERIOD 2 **;                                           00000590
47          ARRAY MRPBEG2 (I) V1050 V2050 V3050 V4050;                         00000600
48          ARRAY DRPBEG2 (I) V1051 V2051 V3051 V4051;                         00000610
49          ARRAY MRPEND2 (I) V1052 V2052 V3052 V4052;                         00000620
50          ARRAY DRPEND2 (I) V1053 V2053 V3053 V4053;                         00000630
51          ARRAY CUSTCHG2 (I) V1054 V2054 V3054 V4054;                        00000640
52          ** FOR RATE PERIOD 3 **;                                           00000650
53          ARRAY MRPBEG3 (I) V1055 V2055 V3055 V4055;                         00000660
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54          ARRAY DRPBEG3 (I) V1056 V2056 V3056 V4056;                              00000670
55          ARRAY MRPEND3 (I) V1057 V2057 V3057 V4057;                              00000680
56          ARRAY DRPEND3 (I) V1058 V2058 V3058 V4058;                              00000690
57          ARRAY CUSTCHG3 (I) V1059 V2059 V3059 V4059;                             00000700
58          ** FOR RATE PERIOD 4 **;                                                00000710
59          ARRAY MRPBEG4 (I) V1060 V2060 V3060 V4060;                              00000720
60          ARRAY DRPBEG4 (I) V1061 V2061 V3061 V4061;                              00000730
61          ARRAY MRPEND4 (I) V1062 V2062 V3062 V4062;                              00000740
62          ARRAY DRPEND4 (I) V1063 V2063 V3063 V4063;                              00000750
63          ARRAY CUSTCHG4 (I) V1064 V2064 V3064 V4064;                             00000760
64          ** FOR RATE PERIOD 5 **;                                                00000770
65          ARRAY MRPBEG5 (I) V1065 V2065 V3065 V4065;                              00000780
66          ARRAY DRPBEG5 (I) V1066 V2066 V3066 V4066;                              00000790
67          ARRAY MRPEND5 (I) V1067 V2067 V3067 V4067;                              00000800
68          ARRAY DRPEND5 (I) V1068 V2068 V3068 V4068;                              00000810
69          ARRAY CUSTCHG5 (I) V1069 V2069 V3069 V4069;                             00000820
70          **** INFORMATION FROM CARD #4 ****;                                     00000830
71          ** FUEL COST INFORMATION FOR RATE PERIOD 1: WINTER COSTS **;            00000840
72          ** BLOCK #1 **;                                                         00000850
73          ARRAY WBCST11 (I) V1077 V2077 V3077 V4077;                             00000860
74          ARRAY WBBEG11 (I) V1078 V2078 V3078 V4078;                             00000870
75          ARRAY WBEND11 (I) V1079 V2079 V3079 V4079;                             00000880
76          ** BLOCK #2 **;                                                         00000890
77          ARRAY WBCST12 (I) V1080 V2080 V3080 V4080;                             00000900
78          ARRAY WBBEG12 (I) V1081 V2081 V3081 V4081;                             00000910
79          ARRAY WBEND12 (I) V1082 V2082 V3082 V4082;                             00000920
80          ** BLOCK #3 **;                                                         00000930
81          ARRAY WBCST13 (I) V1083 V2083 V3083 V4083;                             00000940
82          ARRAY WBBEG13 (I) V1084 V2084 V3084 V4084;                             00000950
83          ARRAY WBEND13 (I) V1085 V2085 V3085 V4085;                             00000960
84          ** BLOCK #4 **;                                                         00000970
85          ARRAY WBCST14 (I) V1086 V2086 V3086 V4086;                             00000980
86          ARRAY WBBEG14 (I) V1087 V2087 V3087 V4087;                             00000990
87          ARRAY WBEND14 (I) V1088 V2088 V3088 V4088;                             00001000
88          ** BLOCK #5 **;                                                         00001010
89          ARRAY WBCST15 (I) V1089 V2089 V3089 V4089;                             00001020
90          ARRAY WBBEG15 (I) V1090 V2090 V3090 V4090;                             00001030
91          ARRAY WBEND15 (I) V1091 V2091 V3091 V4091;                             00001040
92          ** FUEL COST INFORMATION FOR RATE PERIOD 1: SUMMER COSTS **;            00001050
93          ** BLOCK #1 **;                                                         00001060
94          ARRAY SBCST11 (I) V1107 V2107 V3107 V4107;                             00001070
95          ARRAY SBBEG11 (I) V1108 V2108 V3108 V4108;                             00001080
96          ARRAY SBEND11 (I) V1109 V2109 V3109 V4109;                             00001090
97          ** BLOCK #2 **;                                                         00001100
98          ARRAY SBCST12 (I) V1110 V2110 V3110 V4110;                             00001110
99          ARRAY SBBEG12 (I) V1111 V2111 V3111 V4111;                             00001120
100         ARRAY SBEND12 (I) V1112 V2112 V3112 V4112;                             00001130
101         ** BLOCK #3 **;                                                         00001140
102         ARRAY SBCST13 (I) V1113 V2113 V3113 V4113;                             00001150
103         ARRAY SBBEG13 (I) V1114 V2114 V3114 V4114;                             00001160
104         ARRAY SBEND13 (I) V1115 V2115 V3115 V4115;                             00001170
105         ** BLOCK #4 **;                                                         00001180
106         ARRAY SBCST14 (I) V1116 V2116 V3116 V4116;                             00001190
107         ARRAY SBBEG14 (I) V1117 V2117 V3117 V4117;                             00001200
108         ARRAY SBEND14 (I) V1118 V2118 V3118 V4118;                             00001210
109         ** BLOCK #5 **;                                                         00001220
110         ARRAY SBCST15 (I) V1119 V2119 V3119 V4119;                             00001230
111         ARRAY SBBEG15 (I) V1120 V2120 V3120 V4120;                             00001240
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112      ARRAY SBEND15 (I) V1121 V2121 V3121 V4121;                          00001250
113      ** FUEL COST INFORMATION FOR RATE PERIOD 2: WINTER COSTS **;        00001260
114      ** BLOCK #1 **;                                                     00001270
115      ARRAY WBCST21 (I) V1137 V2137 V3137 V4137;                          00001280
116      ARRAY WBBEG21 (I) V1138 V2138 V3138 V4138;                          00001290
117      ARRAY WBEND21 (I) V1139 V2139 V3139 V4139;                          00001300
118      ** BLOCK #2 **;                                                     00001310
119      ARRAY WBCST22 (I) V1140 V2140 V3140 V4140;                          00001320
120      ARRAY WBBEG22 (I) V1141 V2141 V3141 V4141;                          00001330
121      ARRAY WBEND22 (I) V1142 V2142 V3142 V4142;                          00001340
122      ** BLOCK #3 **;                                                     00001350
123      ARRAY WBCST23 (I) V1143 V2143 V3143 V4143;                          00001360
124      ARRAY WBBEG23 (I) V1144 V2144 V3144 V4144;                          00001370
125      ARRAY WBEND23 (I) V1145 V2145 V3145 V4145;                          00001380
126      ** BLOCK #4 **;                                                     00001390
127      ARRAY WBCST24 (I) V1146 V2146 V3146 V4146;                          00001400
128      ARRAY WBBEG24 (I) V1147 V2147 V3147 V4147;                          00001410
129      ARRAY WBEND24 (I) V1148 V2148 V3148 V4148;                          00001420
130      ** BLOCK #5 **;                                                     00001430
131      ARRAY WBCST25 (I) V1149 V2149 V3149 V4149;                          00001440
132      ARRAY WBBEG25 (I) V1150 V2150 V3150 V4150;                          00001450
133      ARRAY WBEND25 (I) V1151 V2151 V3151 V4151;                          00001460
134      ** FUEL COST INFORMATION FOR RATE PERIOD 2: SUMMER COSTS **;        00001470
135      ** BLOCK #1 **;                                                     00001480
136      ARRAY SBCST21 (I) V1167 V2167 V3167 V4167;                          00001490
137      ARRAY SBBEG21 (I) V1168 V2168 V3168 V4168;                          00001500
138      ARRAY SBEND21 (I) V1169 V2169 V3169 V4169;                          00001510
139      ** BLOCK #2 **;                                                     00001520
140      ARRAY SBCST22 (I) V1170 V2170 V3170 V4170;                          00001530
141      ARRAY SBBEG22 (I) V1177 V2171 V3171 V4171;                          00001540
142      ARRAY SBEND22 (I) V1172 V2172 V3172 V4172;                          00001550
143      ** BLOCK #3 **;                                                     00001560
144      ARRAY SBCST23 (I) V1173 V2173 V3173 V4173;                          00001570
145      ARRAY SBBEG23 (I) V1174 V2174 V3174 V4174;                          00001580
146      ARRAY SBEND23 (I) V1175 V2175 V3175 V4175;                          00001590
147      ** BLOCK #4 **;                                                     00001600
148      ARRAY SBCST24 (I) V1176 V2176 V3176 V4176;                          00001610
149      ARRAY SBBEG24 (I) V1177 V2177 V3177 V4177;                          00001620
150      ARRAY SBEND24 (I) V1178 V2178 V3178 V4178;                          00001630
151      ** BLOCK #5 **;                                                     00001640
152      ARRAY SBCST25 (I) V1179 V2179 V3179 V4179;                          00001650
153      ARRAY SBBEG25 (I) V1180 V2180 V3180 V4180;                          00001660
154      ARRAY SBEND25 (I) V1181 V2181 V3181 V4181;                          00001670
155      ** FUEL COST INFORMATION FOR RATE PERIOD 3: WINTER COSTS **;        00001680
156      ** BLOCK #1 **;                                                     00001690
157      ARRAY WBCST31 (I) V1197 V2197 V3197 V4197;                          00001700
158      ARRAY WBBEG31 (I) V1198 V2198 V3198 V4198;                          00001710
159      ARRAY WBEND31 (I) V1199 V2199 V3199 V4199;                          00001720
160      ** BLOCK #2 **;                                                     00001730
161      ARRAY WBCST32 (I) V1200 V2200 V3200 V4200;                          00001740
162      ARRAY WBBEG32 (I) V1201 V2201 V3201 V4201;                          00001750
163      ARRAY WBEND32 (I) V1202 V2202 V3202 V4202;                          00001760
164      ** BLOCK #3 **;                                                     00001770
165      ARRAY WBCST33 (I) V1203 V2203 V3203 V4203;                          00001780
166      ARRAY WBBEG33 (I) V1204 V2204 V3204 V4204;                          00001790
167      ARRAY WBEND33 (I) V1205 V2205 V3205 V4205;                          00001800
168      ** BLOCK #4 **;                                                     00001810
169      ARRAY WBCST34 (I) V1206 V2206 V3206 V4206;                          00001820
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170        ARRAY WBBEG34 (I) V1207 V2207 V3207 V4207;                        00001830
171        ARRAY WBEND34 (I) V1208 V2208 V3208 V4208;                        00001840
172        ** BLOCK #5 **;                                                   00001850
173        ARRAY WBCST35 (I) V1209 V2209 V3209 V4209;                        00001860
174        ARRAY WBBEG35 (I) V1210 V2210 V3210 V4210;                        00001870
175        ARRAY WBEND35 (I) V1211 V2211 V3211 V4211;                        00001880
176        ** FUEL COST INFORMATION FOR RATE PERIOD 3: SUMMER COSTS **;      00001890
177        ** BLOCK #1 **;                                                   00001900
178        ARRAY SBCST31 (I) V1227 V2227 V3227 V4227;                        00001910
179        ARRAY SBBEG31 (I) V1228 V2228 V3228 V4228;                        00001920
180        ARRAY SBEND31 (I) V1229 V2229 V3229 V4229;                        00001930
181        ** BLOCK #2 **;                                                   00001940
182        ARRAY SBCST32 (I) V1230 V2230 V3230 V4230;                        00001950
183        ARRAY SBBEG32 (I) V1231 V2231 V3231 V4231;                        00001960
184        ARRAY SBEND32 (I) V1232 V2232 V3232 V4232;                        00001970
185        ** BLOCK #3 **;                                                   00001980
186        ARRAY SBCST33 (I) V1233 V2233 V3233 V4233;                        00001990
187        ARRAY SBBEG33 (I) V1234 V2234 V3334 V4234;                        00002000
188        ARRAY SBEND33 (I) V1235 V2235 V3235 V4235;                        00002010
189        ** BLOCK #4 **;                                                   00002020
190        ARRAY SBCST34 (I) V1236 V2236 V3236 V4236;                        00002030
191        ARRAY SBBEG34 (I) V1237 V2237 V3237 V4237;                        00002040
192        ARRAY SBEND34 (I) V1238 V2238 V3238 V4238;                        00002050
193        ** BLOCK #5 **;                                                   00002060
194        ARRAY SBCST35 (I) V1239 V2239 V3239 V4239;                        00002070
195        ARRAY SBBEG35 (I) V1240 V2240 V3240 V4240;                        00002080
196        ARRAY SBEND35 (I) V1241 V2241 V3241 V4241;                        00002090
197        ** FUEL COST INFORMATION FOR RATE PERIOD 4: WINTER COSTS **;      00002100
198        ** BLOCK #1 **;                                                   00002110
199        ARRAY WBCST41 (I) V1257 V2257 V3257 V4257;                        00002120
200        ARRAY WBBEG41 (I) V1258 V2258 V3258 V4258;                        00002130
201        ARRAY WBEND41 (I) V1259 V2259 V3259 V4259;                        00002140
202        ** BLOCK #2 **;                                                   00002150
203        ARRAY WBCST42 (I) V1260 V2260 V3260 V4260;                        00002160
204        ARRAY WBBEG42 (I) V1261 V2261 V3261 V4261;                        00002170
205        ARRAY WBEND42 (I) V1262 V2262 V3262 V4262;                        00002180
206        ** BLOCK #3 **;                                                   00002190
207        ARRAY WBCST43 (I) V1263 V2263 V3263 V4263;                        00002200
208        ARRAY WBBEG43 (I) V1264 V2264 V3264 V4264;                        00002210
209        ARRAY WBEND43 (I) V1265 V2265 V3265 V4265;                        00002220
210        ** BLOCK #4 **;                                                   00002230
211        ARRAY WBCST44 (I) V1266 V2266 V3266 V4266;                        00002240
212        ARRAY WBBEG44 (I) V1267 V2267 V3267 V4267;                        00002250
213        ARRAY WBEND44 (I) V1268 V2268 V3268 V4268;                        00002260
214        ** BLOCK #5 **;                                                   00002270
215        ARRAY WBCST45 (I) V1269 V2269 V3269 V4269;                        00002280
216        ARRAY WBBEG45 (I) V1270 V2270 V3270 V4270;                        00002290
217        ARRAY WBEND45 (I) V1271 V2271 V3271 V4271;                        00002300
218        ** FUEL COST INFORMATION FOR RATE PERIOD 4: SUMMER COSTS **;      00002310
219        ** BLOCK #1 **;                                                   00002320
220        ARRAY SBCST41 (I) V1287 V2827 V3287 V4287;                        00002330
221        ARRAY SBBEG41 (I) V1288 V2828 V3288 V4288;                        00002340
222        ARRAY SBEND41 (I) V1289 V2829 V3289 V4289;                        00002350
223        ** BLOCK #2 **;                                                   00002360
224        ARRAY SBCST42 (I) V1290 V2290 V3290 V4290;                        00002370
225        ARRAY SBBEG42 (I) V1291 V2291 V3291 V4291;                        00002380
226        ARRAY SBEND42 (I) V1292 V2292 V3292 V4292;                        00002390
227        ** BLOCK #3 **;                                                   00002400
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228      ARRAY SBCST43 (I) V1293 V2293 V3293 V4293;                     00002410
229      ARRAY SBBEG43 (I) V1294 V2294 V3294 V4294;                     00002420
230      ARRAY SBEND43 (I) V1295 V2295 V3295 V4295;                     00002430
231      ** BLOCK #4 **;                                                00002440
232      ARRAY SBCST44 (I) V1296 V2296 V3296 V4296;                     00002450
233      ARRAY SBBEG44 (I) V1297 V2297 V3297 V4297;                     00002460
234      ARRAY SBEND44 (I) V1298 V2298 V3298 V4298;                     00002470
235      ** BLOCK #5 **;                                                00002480
236      ARRAY SBCST45 (I) V1299 V2299 V3299 V4299;                     00002490
237      ARRAY SBBEG45 (I) V1300 V2300 V3300 V4300;                     00002500
238      ARRAY SBEND45 (I) V1301 V2301 V3301 V4301;                     00002510
239      ** FUEL COST INFORMATION FOR RATE PERIOD 5: WINTER COSTS **;   00002520
240      ** BLOCK #1 **;                                                00002530
241      ARRAY WBCST51 (I) V1317 V2317 V3317 V4317;                     00002540
242      ARRAY WBBEG51 (I) V1318 V2318 V3318 V4318;                     00002550
243      ARRAY WBEND51 (I) V1319 V2319 V3319 V4319;                     00002560
244      ** BLOCK #2 **;                                                00002570
245      ARRAY WBCST52 (I) V1320 V2320 V3320 V4320;                     00002580
246      ARRAY WBBEG52 (I) V1321 V2321 V3321 V4321;                     00002590
247      ARRAY WBEND52 (I) V1322 V2322 V3322 V4322;                     00002600
248      ** BLOCK #3 **;                                                00002610
249      ARRAY WBCST53 (I) V1323 V2323 V3323 V4323;                     00002620
250      ARRAY WBBEG53 (I) V1324 V2324 V3324 V4324;                     00002630
251      ARRAY WBEND53 (I) V1325 V2325 V3325 V4325;                     00002640
252      ** BLOCK #4 **;                                                00002650
253      ARRAY WBCST54 (I) V1326 V2326 V3326 V4326;                     00002660
254      ARRAY WBBEG54 (I) V1327 V2327 V3327 V4327;                     00002670
255      ARRAY WBEND54 (I) V1328 V2328 V3328 V4328;                     00002680
256      ** BLOCK #5 **;                                                00002690
257      ARRAY WBCST55 (I) V1329 V2329 V3329 V4329;                     00002700
258      ARRAY WBBEG55 (I) V1330 V2330 V3330 V4330;                     00002710
259      ARRAY WBEND55 (I) V1331 V2331 V3331 V4331;                     00002720
260      ** FUEL COST INFORMATION FOR RATE PERIOD 5: SUMMER COSTS **;   00002730
261      ** BLOCK #1 **;                                                00002740
262      ARRAY SBCST51 (I) V1347 V3427 V3347 V4347;                     00002750
263      ARRAY SBBEG51 (I) V1348 V3434 V3348 V4348;                     00002760
264      ARRAY SBEND51 (I) V1349 V3429 V3349 V4349;                     00002770
265      ** BLOCK #2 **;                                                00002780
266      ARRAY SBCST52 (I) V1350 V2350 V3350 V4350;                     00002790
267      ARRAY SBBEG52 (I) V1351 V2351 V3351 V4351;                     00002800
268      ARRAY SBEND52 (I) V1352 V2352 V3352 V4352;                     00002810
269      ** BLOCK #3 **;                                                00002820
270      ARRAY SBCST53 (I) V1353 V2353 V3353 V4353;                     00002830
271      ARRAY SBBEG53 (I) V1354 V2354 V3354 V4354;                     00002840
272      ARRAY SBEND53 (I) V1355 V2355 V3355 V4355;                     00002850
273      ** BLOCK #4 **;                                                00002860
274      ARRAY SBCST54 (I) V1356 V2356 V3356 V4356;                     00002870
275      ARRAY SBBEG54 (I) V1357 V2357 V3357 V4357;                     00002880
276      ARRAY SBEND54 (I) V1358 V2358 V3358 V4358;                     00002890
277      ** BLOCK #5 **;                                                00002900
278      ARRAY SBCST55 (I) V1359 V2359 V3359 V4359;                     00002910
279      ARRAY SBBEG55 (I) V1360 V2360 V3360 V4360;                     00002920
280      ARRAY SBEND55 (I) V1361 V2361 V3361 V4361;                     00002930
281      ***** INFORMATION ACROSS 5 RATE PERIODS (J=1,5) *****;         00002940
282      ** EFFECTIVE DATES OF RATE PERIODS ACROSS RATE PERIOD **;      00002950
283      ARRAY MRPBEG (J) MRPBEG1 MRPBEG2 MRPBEG3 MRPBEG4 MRPBEG5;      00002960
284      ARRAY DRPBEG (J) DRPBEG1 DRPBEG2 DRPBEG3 DRPBEG4 DRPBEG5;      00002970
285      ARRAY MRPEND (J) MRPEND1 MRPEND2 MRPEND3 MRPEND4 MRPEND5;      00002980
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286        ARRAY DRPEND (J) DRPEND1 DRPEND2 DRPEND3 DRPEND4 DRPEND5;                     00002990
287        ** CUSTOMER CHARGE ACROSS RATE PERIODS **;                                    00003000
288        ARRAY CUSTCHG (J) CUSTCHG1 CUSTCHG2 CUSTCHG3 CUSTCHG4 CUSTCHG5;               00003010
289        **** FUEL COST INFORMATION PER COMPANY ACROSS RATE PERIOD ****;               00003020
290        ** BLOCK #1 **;                                                               00003030
291        ARRAY WBCST1 (J) WBCST11 WBCST21 WBCST31 WBCST41 WBCST51;                     00003040
292        ARRAY SBCST1 (J) SBCST11 SBCST21 SBCST31 SBCST41 SBCST51;                     00003050
293        ARRAY WBBEG1 (J) WBBEG11 WBBEG21 WBBEG31 WBBEG41 WBBEG51;                     00003060
294        ARRAY SBBEG1 (J) SBBEG11 SBBEG21 SBBEG31 SBBEG41 SBBEG51;                     00003070
295        ARRAY WBEND1 (J) WBEND11 WBEND21 WBEND31 WBEND41 WBEND51;                     00003080
296        ARRAY SBEND1 (J) SBEND11 SBEND21 SBEND31 SBEND41 SBEND51;                     00003090
297        ** BLOCK #2 **;                                                               00003100
298        ARRAY WBCST2 (J) WBCST12 WBCST22 WBCST32 WBCST42 WBCST52;                     00003110
299        ARRAY SBCST2 (J) SBCST12 SBCST22 SBCST32 SBCST42 SBCST52;                     00003120
300        ARRAY WBBEG2 (J) WBBEG12 WBBEG22 WBBEG32 WBBEG42 WBBEG52;                     00003130
301        ARRAY SBBEG2 (J) SBBEG12 SBBEG22 SBBEG32 SBBEG42 SBBEG52;                     00003140
302        ARRAY WBEND2 (J) WBEND12 WBEND22 WBEND32 WBEND42 WBEND52;                     00003150
303        ARRAY SBEND2 (J) SBEND12 SBEND22 SBEND32 SBEND42 SBEND52;                     00003160
304        ** BLOCK #3 **;                                                               00003170
305        ARRAY WBCST3 (J) WBCST13 WBCST23 WBCST33 WBCST43 WBCST53;                     00003180
306        ARRAY SBCST3 (J) SBCST13 SBCST23 SBCST33 SBCST43 SBCST53;                     00003190
307        ARRAY WBBEG3 (J) WBBEG13 WBBEG23 WBBEG33 WBBEG43 WBBEG53;                     00003200
308        ARRAY SBBEG3 (J) SBBEG13 SBBEG23 SBBEG33 SBBEG43 SBBEG53;                     00003210
309        ARRAY WBEND3 (J) WBEND13 WBEND23 WBEND33 WBEND43 WBEND53;                     00003220
310        ARRAY SBEND3 (J) SBEND13 SBEND23 SBEND33 SBEND43 SBEND53;                     00003230
311        ** BLOCK #4 **;                                                               00003240
312        ARRAY WBCST4 (J) WBCST14 WBCST24 WBCST34 WBCST44 WBCST54;                     00003250
313        ARRAY SBCST4 (J) SBCST14 SBCST24 SBCST34 SBCST44 SBCST54;                     00003260
314        ARRAY WBBEG4 (J) WBBEG14 WBBEG24 WBBEG34 WBBEG44 WBBEG54;                     00003270
315        ARRAY SBBEG4 (J) SBBEG14 SBBEG24 SBBEG34 SBBEG44 SBBEG54;                     00003280
316        ARRAY WBEND4 (J) WBEND14 WBEND24 WBEND34 WBEND44 WBEND54;                     00003290
317        ARRAY SBEND4 (J) SBEND14 SBEND24 SBEND34 SBEND44 SBEND54;                     00003300
318        ** BLOCK #5 **;                                                               00003310
319        ARRAY WBCST5 (J) WBCST15 WBCST25 WBCST35 WBCST45 WBCST55;                     00003320
320        ARRAY SBCST5 (J) SBCST15 SBCST25 SBCST35 SBCST45 SBCST55;                     00003330
321        ARRAY WBBEG5 (J) WBBEG15 WBBEG25 WBBEG35 WBBEG45 WBBEG55;                     00003340
322        ARRAY SBBEG5 (J) SBBEG15 SBBEG25 SBBEG35 SBBEG45 SBBEG55;                     00003350
323        ARRAY WBEND5 (J) WBEND15 WBEND25 WBEND35 WBEND45 WBEND55;                     00003360
324        ARRAY SBEND5 (J) SBEND15 SBEND25 SBEND35 SBEND45 SBEND55;                     00003370
325        ***** INFORMATION ACROSS 5 BLOCKS (K=1,5) *****;                              00003380
326        **** FUEL COST INFORMATION PER RATE PERIOD ACROSS BLOCKS ****;                00003390
327        ARRAY WBLKCOST (K) WBCST1 WBCST2 WBCST3 WBCST4 WBCST5;                        00003400
328        ARRAY SBLKCOST (K) SBCST1 SBCST2 SBCST3 SBCST4 SBCST5;                        00003410
329        ARRAY WBLKBEG (K) WBBEG1 WBBEG2 WBBEG3 WBBEG4 WBBEG5;                         00003420
330        ARRAY SBLKBEG (K) SBBEG1 SBBEG2 SBBEG3 SBBEG4 SBBEG5;                         00003430
331        ARRAY WBLKEND (K) WBEND1 WBEND2 WBEND3 WBEND4 WBEND5;                         00003440
332        ARRAY SBLKEND (K) SBEND1 SBEND2 SBEND3 SBEND4 SBEND5;                         00003450
333        ** FUEL ADJUSTMENT INFORMATION **;                                            00003460
334        ARRAY FA (L) FAJAN FAFEB FAMAR FAAPR FAMAY FAJUN FAJUL FAAUG FASEP            00003470
335              FAOCT FANOV FADEC;                                                      00003480
336        ARRAY FACR (M) $ FACR1 FACR2 FACR3 FACR4;                                     00003490
337                                                                                      00003500
338        ***********   CREATE ARRAYS FOR NATURAL GAS VARIABLES **********;             00003510
339        ******* GENERAL INFORMATION FROM CARD #53, #62, #71 ******;                  00003520
340        **** INFORMATION ACROSS COMPANIES (I=1,3) ****;                               00003530
341        ARRAY GFUELTYP (I) V5003 V6003 V7003 ;                                        00003540
342        ARRAY GCOMPNUM (I) V5004 V6004 V7004 ;                                        00003550
343        ARRAY GNODATA (I) V5005 V6005 V7005 ;                                         00003560
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344        ARRAY GCOMPNAM (I) $ V5006 V6006 V7006 ;                          00003570
345        ARRAY GSUMBEG (I) V5007 V6007 V7007 ;                             00003580
346        ARRAY GSUMEND (I) V5008 V6008 V7008 ;                             00003590
347        ARRAY GWINBEG (I) V5009 V6009 V7009 ;                             00003600
348        ARRAY GWINEND (I) V5010 V6010 V7010 ;                             00003610
349        ARRAY GNUMRP (I) V5011 V6011 V7011 ;                              00003620
350        ARRAY GUNITRP1 (I) V5012 V6012 V7012;                             00003630
351        ARRAY GUNITRP2 (I) V5013 V6013 V7013;                             00003640
352        ARRAY GUNITRP3 (I) V5014 V6014 V7014;                             00003650
353        ** MONTHLY FUEL ADJUSTMENT COSTS ACROSS COMPANIES **;             00003660
354        ARRAY GFAJAN (I) V5025 V6025 V7025 ;                              00003670
355        ARRAY GFAFEB (I) V5026 V6026 V7026 ;                              00003680
356        ARRAY GFAMAR (I) V5027 V6027 V7027 ;                              00003690
357        ARRAY GFAAPR (I) V5028 V6028 V7028;                               00003700
358        ARRAY GFAMAY (I) V5029 V6029 V7029;                               00003710
359        ARRAY GFAJUN (I) V5030 V6030 V7030;                               00003720
360        ARRAY GFAJUL (I) V5031 V6031 V7031;                               00003730
361        ARRAY GFAAUG (I) V5032 V6032 V7032;                               00003740
362        ARRAY GFASEP (I) V5033 V6033 V7033;                               00003750
363        ARRAY GFAOCT (I) V5034 V6034 V7034;                               00003760
364        ARRAY GFANOV (I) V5035 V6035 V7035;                               00003770
365        ARRAY GFADEC (I) V5036 V6036 V7036;                               00003780
366        ** FUEL ADJUSTMENT CREDIT CODES ACROSS COMPANIES **;              00003790
367        ARRAY GFACR1 (I) $ V5037 V6037 V7037;                             00003800
368        ARRAY GFACR2 (I) $ V5038 V6038 V7038;                             00003810
369        ARRAY GFACR3 (I) $ V5039 V6039 V7039;                             00003820
370        ARRAY GFACR4 (I) $ V5040 V6040 V7040;                             00003830
371        ***** INFORMATION FROM CARD # *****;                              00003840
372        ** EFFECTIVE DATES AND SERVICE CHARGES ACROSS COMPANIES **;       00003850
373        ** FOR RATE PERIOD #1 **;                                         00003860
374        ARRAY GMRPBEG1 (I) V5045 V6045 V7045;                             00003870
375        ARRAY GDRPBEG1 (I) V5046 V6046 V7046;                             00003880
376        ARRAY GMRPEND1 (I) V5047 V6047 V7047;                             00003890
377        ARRAY GDRPEND1 (I) V5048 V6048 V7048;                             00003900
378        ARRAY GCSTCHG1 (I) V5049 V6049 V7049;                             00003910
379        ** FOR RATE PERIOD #2 **;                                         00003920
380        ARRAY GMRPBEG2 (I) V5050 V6050 V7050;                             00003930
381        ARRAY GDRPBEG2 (I) V5051 V6051 V7051;                             00003940
382        ARRAY GMRPEND2 (I) V5052 V6052 V7052;                             00003950
383        ARRAY GDRPEND2 (I) V5053 V6053 V7053;                             00003960
384        ARRAY GCSTCHG2 (I) V5054 V6054 V7054;                             00003970
385        ** FOR RATE PERIOD #3 **;                                         00003980
386        ARRAY GMRPBEG3 (I) V5055 V6055 V7055;                             00003990
387        ARRAY GDRPBEG3 (I) V5056 V6056 V7056;                             00004000
388        ARRAY GMRPEND3 (I) V5057 V6057 V7057;                             00004010
389        ARRAY GDRPEND3 (I) V5058 V6058 V7058;                             00004020
390        ARRAY GCSTCHG3 (I) V5059 V6059 V7059;                             00004030
391        ***** INFORMATION FROM CARD # *****;                              00004040
392        ** FUEL COST INFORMATION FOR RATE PERIOD 1: WINTER COSTS **;      00004050
393        ** BLOCK #1 **;                                                   00004060
394        ARRAY GWBCST11 (I) V5077 V6077 V7077;                             00004070
395        ARRAY GWBBEG11 (I) V5078 V6078 V7078;                             00004080
396        ARRAY GWBEND11 (I) V5079 V6079 V7079;                             00004090
397        ** BLOCK #2 **;                                                   00004100
398        ARRAY GWBCST12 (I) V5080 V6080 V7080;                             00004110
399        ARRAY GWBBEG12 (I) V5081 V6081 V7081;                             00004120
400        ARRAY GWBEND12 (I) V5082 V6082 V7082;                             00004130
401        ** BLOCK #3 **;                                                   00004140
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402        ARRAY GWBCST13 (I) V5083 V6083 V7083;                                    00004150
403        ARRAY GWBBEG13 (I) V5084 V6084 V7084;                                    00004160
404        ARRAY GWBEND13 (I) V5085 V6085 V7085;                                    00004170
405        ** BLOCK #4 **;                                                          00004180
406        ARRAY GWBCST14 (I) V5086 V6086 V7086;                                    00004190
407        ARRAY GWBBEG14 (I) V5087 V6087 V7087;                                    00004200
408        ARRAY GWBEND14 (I) V5088 V6088 V7088;                                    00004210
409        ** BLOCK #5 **;                                                          00004220
410        ARRAY GWBCST15 (I) V5089 V6089 V7089;                                    00004230
411        ARRAY GWBBEG15 (I) V5090 V6090 V7090;                                    00004240
412        ARRAY GWBEND15 (I) V5091 V6091 V7091;                                    00004250
413        ** BLOCK #6 **;                                                          00004260
414        ARRAY GWBCST16 (I) V5092 V6092 V7092;                                    00004270
415        ARRAY GWBBEG16 (I) V5093 V6093 V7093;                                    00004280
416        ARRAY GWBEND16 (I) V5094 V6094 V7094;                                    00004290
417        ** BLOCK #7 **;                                                          00004300
418        ARRAY GWBCST17 (I) V5095 V6095 V7095;                                    00004310
419        ARRAY GWBBEG17 (I) V5096 V6096 V7096;                                    00004320
420        ARRAY GWBEND17 (I) V5097 V6097 V7097;                                    00004330
421        ** FUEL COST INFORMATION FOR RATE PERIOD 1: SUMMER COSTS **;             00004340
422        ** BLOCK #1 **;                                                          00004350
423        ARRAY GSBCST11 (I) V5107 V6107 V1107;                                    00004360
424        ARRAY GSBBEG11 (I) V5108 V6108 V7108;                                    00004370
425        ARRAY GSBEND11 (I) V5109 V6109 V7109;                                    00004380
426        ** BLOCK #2 **;                                                          00004390
427        ARRAY GSBCST12 (I) V5110 V6110 V7110;                                    00004400
428        ARRAY GSBBEG12 (I) V5111 V6111 V7111;                                    00004410
429        ARRAY GSBEND12 (I) V5112 V6112 V7112;                                    00004420
430        ** BLOCK #3 **;                                                          00004430
431        ARRAY GSBCST13 (I) V5113 V6113 V7113;                                    00004440
432        ARRAY GSBBEG13 (I) V5114 V6114 V7114;                                    00004450
433        ARRAY GSBEND13 (I) V5115 V6115 V7115;                                    00004460
434        ** BLOCK #4 **;                                                          00004470
435        ARRAY GSBCST14 (I) V5116 V6116 V7116;                                    00004480
436        ARRAY GSBBEG14 (I) V5117 V6117 V7117;                                    00004490
437        ARRAY GSBEND14 (I) V5118 V6118 V7118;                                    00004500
438        ** BLOCK #5 **;                                                          00004510
439        ARRAY GSBCST15 (I) V5119 V6119 V7119;                                    00004520
440        ARRAY GSBBEG15 (I) V5120 V6120 V7120;                                    00004530
441        ARRAY GSBEND15 (I) V5121 V6121 V7121;                                    00004540
442        ** BLOCK #6 **;                                                          00004550
443        ARRAY GSBCST16 (I) V5122 V6122 V7122;                                    00004560
444        ARRAY GSBBEG16 (I) V5123 V6123 V7123;                                    00004570
445        ARRAY GSBEND16 (I) V5124 V6124 V7124;                                    00004580
446        ** BLOCK #7 **;                                                          00004590
447        ARRAY GSBCST17 (I) V5125 V6125 V7125;                                    00004600
448        ARRAY GSBBEG17 (I) V5126 V6126 V7126;                                    00004610
449        ARRAY GSBEND17 (I) V5127 V6127 V7127;                                    00004620
450        ** FUEL COST INFORMATION FOR RATE PERIOD 2: WINTER COSTS **;             00004630
451        ** BLOCK #1 **;                                                          00004640
452        ARRAY GWBCST21 (I) V5137 V6137 V7137;                                    00004650
453        ARRAY GWBBEG21 (I) V5138 V6138 V7138;                                    00004660
454        ARRAY GWBEND21 (I) V5139 V6139 V7139;                                    00004670
455        ** BLOCK #2 **;                                                          00004680
456        ARRAY GWBCST22 (I) V5140 V6140 V7140;                                    00004690
457        ARRAY GWBBEG22 (I) V5141 V6141 V7141;                                    00004700
458        ARRAY GWBEND22 (I) V5142 V6142 V7142;                                    00004710
459        ** BLOCK #3 **;                                                          00004720
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460     ARRAY GWBCST23 (I) V5143 V6143 V7143;              00004730
461     ARRAY GWBBEG23 (I) V5144 V6144 V7144;              00004740
462     ARRAY GWBEND23 (I) V5145 V6145 V7145;              00004750
463     ** BLOCK #4 **;                                    00004760
464     ARRAY GWBCST24 (I) V5146 V6146 V7146;              00004770
465     ARRAY GWBBEG24 (I) V5147 V6147 V7147;              00004780
466     ARRAY GWBEND24 (I) V5148 V6148 V7148;              00004790
467     ** BLOCK #5 **;                                    00004800
468     ARRAY GWBCST25 (I) V5149 V6149 V7149;              00004810
469     ARRAY GWBBEG25 (I) V5150 V6150 V7150;              00004820
470     ARRAY GWBEND25 (I) V5151 V6151 V7151;              00004830
471     ** BLOCK #6 **;                                    00004840
472     ARRAY GWBCST26 (I) V5152 V6152 V7152;              00004850
473     ARRAY GWBBEG26 (I) V5153 V6153 V7153;              00004860
474     ARRAY GWBEND26 (I) V5154 V6154 V7154;              00004870
475     ** BLOCK #7 **;                                    00004880
476     ARRAY GWBCST27 (I) V5155 V6155 V7155;              00004890
477     ARRAY GWBBEG27 (I) V5156 V6156 V7156;              00004900
478     ARRAY GWBEND27 (I) V5157 V6157 V7157;              00004910
479     ** FUEL COST INFORMATION FOR RATE PERIOD 2: SUMMER COSTS **;  00004920
480     ** BLOCK #1 **;                                    00004930
481     ARRAY GSBCST21 (I) V5167 V6167 V7167;              00004940
482     ARRAY GSBBEG21 (I) V5168 V6168 V7168;              00004950
483     ARRAY GSBEND21 (I) V5169 V6169 V7169;              00004960
484     ** BLOCK #2 **;                                    00004970
485     ARRAY GSBCST22 (I) V5170 V6170 V7170;              00004980
486     ARRAY GSBBEG22 (I) V5171 V6171 V7171;              00004990
487     ARRAY GSBEND22 (I) V5172 V6172 V7172;              00005000
488     ** BLOCK #3 **;                                    00005010
489     ARRAY GSBCST23 (I) V5173 V6173 V7173;              00005020
490     ARRAY GSBBEG23 (I) V5174 V6174 V7174;              00005030
491     ARRAY GSBEND23 (I) V5175 V6175 V7175;              00005040
492     ** BLOCK #4 **;                                    00005050
493     ARRAY GSBCST24 (I) V5176 V6176 V7176;              00005060
494     ARRAY GSBBEG24 (I) V5177 V6177 V7177;              00005070
495     ARRAY GSBEND24 (I) V5178 V6178 V7178;              00005080
496     ** BLOCK #5 **;                                    00005090
497     ARRAY GSBCST25 (I) V5179 V6179 V7179;              00005100
498     ARRAY GSBBEG25 (I) V5180 V6180 V7180;              00005110
499     ARRAY GSBEND25 (I) V5181 V6181 V7181;              00005120
500     ** BLOCK #6 **;                                    00005130
501     ARRAY GSBCST26 (I) V5182 V6182 V7182;              00005140
502     ARRAY GSBBEG26 (I) V5183 V6183 V7183;              00005150
503     ARRAY GSBEND26 (I) V5184 V6184 V7184;              00005160
504     ** BLOCK #7 **;                                    00005170
505     ARRAY GSBCST27 (I) V5185 V6185 V7185;              00005180
506     ARRAY GSBBEG27 (I) V5186 V6186 V7186;              00005190
507     ARRAY GSBEND27 (I) V5187 V6187 V7187;              00005200
508     ** FUEL COST INFORMATION FOR RATE PERIOD 3: WINTER COSTS **;  00005210
509     ** BLOCK #1 **;                                    00005220
510     ARRAY GWBCST31 (I) V5197 V6197 V7197;              00005230
511     ARRAY GWBBEG31 (I) V5198 V6198 V7198;              00005240
512     ARRAY GWBEND31 (I) V5199 V6199 V7199;              00005250
513     ** BLOCK #2 **;                                    00005260
514     ARRAY GWBCST32 (I) V5200 V6200 V7200;              00005270
515     ARRAY GWBBEG32 (I) V5201 V6201 V7201;              00005280
516     ARRAY GWBEND32 (I) V5202 V6202 V7202;              00005290
517     ** BLOCK #3 **;                                    00005300
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147

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518          ARRAY GWBCST33 (I) V5203 V6203 V7203;                          00005310
519          ARRAY GWBBEG33 (I) V5204 V6204 V7204;                          00005320
520          ARRAY GWBEND33 (I) V5205 V6205 V7205;                          00005330
521          ** BLOCK #4 **;                                                00005340
522          ARRAY GWBCST34 (I) V5206 V6206 V7206;                          00005350
523          ARRAY GWBBEG34 (I) V5207 V6207 V7207;                          00005360
524          ARRAY GWBEND34 (I) V5208 V6208 V7208;                          00005370
525          ** BLOCK #5 **;                                                00005380
526          ARRAY GWBCST35 (I) V5209 V6209 V7209;                          00005390
527          ARRAY GWBBEG35 (I) V5210 V6210 V7210;                          00005400
528          ARRAY GWBEND35 (I) V5211 V6211 V7211;                          00005410
529          ** BLOCK #6 **;                                                00005420
530          ARRAY GWBCST36 (I) V5212 V6212 V7212;                          00005430
531          ARRAY GWBBEG36 (I) V5213 V6213 V7213;                          00005440
532          ARRAY GWBEND36 (I) V5214 V6214 V7214;                          00005450
533          ** BLOCK #7 **;                                                00005460
534          ARRAY GWBCST37 (I) V5215 V6215 V7215;                          00005470
535          ARRAY GWBBEG37 (I) V5216 V6216 V7216;                          00005480
536          ARRAY GWBEND37 (I) V5217 V6217 V7217;                          00005490
537          ** FUEL COST INFORMATION FOR RATE PERIOD 3: SUMMER COSTS **;   00005500
538          ** BLOCK #1 **;                                                00005510
539          ARRAY GSBCST31 (I) V5227 V6227 V7227;                          00005520
540          ARRAY GSBBEG31 (I) V5228 V6228 V7228;                          00005530
541          ARRAY GSBEND31 (I) V5229 V6229 V7229;                          00005540
542          ** BLOCK #2 **;                                                00005550
543          ARRAY GSBCST32 (I) V5230 V6230 V7230;                          00005560
544          ARRAY GSBBEG32 (I) V5231 V6231 V7231;                          00005570
545          ARRAY GSBEND32 (I) V5232 V6232 V7232;                          00005580
546          ** BLOCK #3 **;                                                00005590
547          ARRAY GSBCST33 (I) V5233 V6233 V7233;                          00005600
548          ARRAY GSBBEG33 (I) V5234 V6234 V7234;                          00005610
549          ARRAY GSBEND33 (I) V5235 V6235 V7235;                          00005620
550          ** BLOCK #4 **;                                                00005630
551          ARRAY GSBCST34 (I) V5236 V6236 V7236;                          00005640
552          ARRAY GSBBEG34 (I) V5237 V6237 V7237;                          00005650
553          ARRAY GSBEND34 (I) V5238 V6238 V7238;                          00005660
554          ** BLOCK #5 **;                                                00005670
555          ARRAY GSBCST35 (I) V5239 V6239 V7239;                          00005680
556          ARRAY GSBBEG35 (I) V5240 V6240 V7240;                          00005690
557          ARRAY GSBEND35 (I) V5241 V6241 V7241;                          00005700
558          ** BLOCK #6 **;                                                00005710
559          ARRAY GSBCST36 (I) V5242 V6242 V7242;                          00005720
560          ARRAY GSBBEG36 (I) V5243 V6243 V7243;                          00005730
561          ARRAY GSBEND36 (I) V5244 V6244 V7244;                          00005740
562          ** BLOCK #7 **;                                                00005750
563          ARRAY GSBCST37 (I) V5245 V6245 V7245;                          00005760
564          ARRAY GSBBEG37 (I) V5246 V6246 V7246;                          00005770
565          ARRAY GSBEND37 (I) V5247 V6247 V7247;                          00005780
566          ***** INFORMATION ACROSS 3 RATE PERIODS (J=1,3) *****;         00005790
567          ** EFFECTIVE DATES OF RATE PERIODS ACROSS RATE PERIODS **;     00005800
568          ARRAY GMRPBEG (J) GMRPBEG1 GMRPBEG2 GMRPBEG3;                  00005810
569          ARRAY GDRPBEG (J) GDRPBEG1 GDRPBEG2 GDRPBEG3;                  00005820
570          ARRAY GMRPEND (J) GMRPEND1 GMRPEND2 GMRPEND3;                  00005830
571          ARRAY GDRPEND (J) GDRPEND1 GDRPEND2 GDRPEND3;                  00005840
572          ARRAY GUNITRP (J) GUNITRP1 GUNITRP2 GUNITRP3;                  00005850
573          ** CUSTOMER CHARGE ACROSS RATE PERIODS **;                     00005860
574          ARRAY GCSTCHG (J) GCSTCHG1 GCSTCHG2 GCSTCHG3 ;                 00005870
575                                                                         00005880
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576      ***** FUEL COST INFORMATION PER COMPANY ACROSS RATE PERIOD *****        00005890
577      ** BLOCK #1 **;                                                         00005900
578      ARRAY GWBCST1 (J) GWBCST11 GWBCST21 GWBCST31;                            00005910
579      ARRAY GSBCST1 (J) GSBCST11 GSBCST21 GSBCST31;                            00005920
580      ARRAY GWBBEG1 (J) GWBBEG11 GWBBEG21 GWBBEG31;                            00005930
581      ARRAY GSBBEG1 (J) GSBBEG11 GSBBEG21 GSBBEG31;                            00005940
582      ARRAY GWBEND1 (J) GWBEND11 GWBEND21 GWBEND31;                            00005950
583      ARRAY GSBEND1 (J) GSBEND11 GSBEND21 GSBEND31;                            00005960
584      ** BLOCK #2 **;                                                         00005970
585      ARRAY GWBCST2 (J) GWBCST12 GWBCST22 GWBCST32;                            00005980
586      ARRAY GSBCST2 (J) GSBCST12 GSBCST22 GSBCST32;                            00005990
587      ARRAY GWBBEG2 (J) GWBBEG12 GWBBEG22 GWBBEG32;                            00006000
588      ARRAY GSBBEG2 (J) GSBBEG12 GSBBEG22 GSBBEG32;                            00006010
589      ARRAY GWBEND2 (J) GWBEND12 GWBEND22 GWBEND32;                            00006020
590      ARRAY GSBEND2 (J) GSBEND12 GSBEND22 GSBEND32;                            00006030
591      ** BLOCK #3 **;                                                         00006040
592      ARRAY GWBCST3 (J) GWBCST13 GWBCST23 GWBCST33;                            00006050
593      ARRAY GSBCST3 (J) GSBCST13 GSBCST23 GSBCST33;                            00006060
594      ARRAY GWBBEG3 (J) GWBBEG13 GWBBEG23 GWBBEG33;                            00006070
595      ARRAY GSBBEG3 (J) GSBBEG13 GSBBEG23 GSBBEG33;                            00006080
596      ARRAY GWBEND3 (J) GWBEND13 GWBEND23 GWBEND33;                            00006090
597      ARRAY GSBEND3 (J) GSBEND13 GSBEND23 GSBEND33;                            00006100
598      ** BLOCK #4 **;                                                         00006110
599      ARRAY GWBCST4 (J) GWBCST14 GWBCST24 GWBCST34;                            00006120
600      ARRAY GSBCST4 (J) GSBCST14 GSBCST24 GSBCST34;                            00006130
601      ARRAY GWBBEG4 (J) GWBBEG14 GWBBEG24 GWBBEG34;                            00006140
602      ARRAY GSBBEG4 (J) GSBBEG14 GSBBEG24 GSBBEG34;                            00006150
603      ARRAY GWBEND4 (J) GWBEND14 GWBEND24 GWBEND34;                            00006160
604      ARRAY GSBEND4 (J) GSBEND14 GSBEND24 GSBEND34;                            00006170
605      ** BLOCK #5 **;                                                         00006180
606      ARRAY GWBCST5 (J) GWBCST15 GWBCST25 GWBCST35;                            00006190
607      ARRAY GSBCST5 (J) GSBCST15 GSBCST25 GSBCST35;                            00006200
608      ARRAY GWBBEG5 (J) GWBBEG15 GWBBEG25 GWBBEG35;                            00006210
609      ARRAY GSBBEG5 (J) GSBBEG15 GSBBEG25 GSBBEG35;                            00006220
610      ARRAY GWBEND5 (J) GWBEND15 GWBEND25 GWBEND35;                            00006230
611      ARRAY GSBEND5 (J) GSBEND15 GSBEND25 GSBEND35;                            00006240
612      ** BLOCK #6 **;                                                         00006250
613      ARRAY GWBCST6 (J) GWBCST16 GWBCST26 GWBCST36;                            00006260
614      ARRAY GSBCST6 (J) GSBCST16 GSBCST26 GSBCST36;                            00006270
615      ARRAY GWBBEG6 (J) GWBBEG16 GWBBEG26 GWBBEG36;                            00006280
616      ARRAY GSBBEG6 (J) GSBBEG16 GSBBEG26 GSBBEG36;                            00006290
617      ARRAY GWBEND6 (J) GWBEND16 GWBEND26 GWBEND36;                            00006300
618      ARRAY GSBEND6 (J) GSBEND16 GSBEND26 GSBEND36;                            00006310
619      ** BLOCK #7 **;                                                         00006320
620      ARRAY GWBCST7 (J) GWBCST17 GWBCST27 GWBCST37;                            00006330
621      ARRAY GSBCST7 (J) GSBCST17 GSBCST27 GSBCST37;                            00006340
622      ARRAY GWBBEG7 (J) GWBBEG17 GWBBEG27 GWBBEG37;                            00006350
623      ARRAY GSBBEG7 (J) GSBBEG17 GSBBEG27 GSBBEG37;                            00006360
624      ARRAY GWBEND7 (J) GWBEND17 GWBEND27 GWBEND37;                            00006370
625      ARRAY GSBEND7 (J) GSBEND17 GSBEND27 GSBEND37;                            00006380
626                                                                              00006390
627      ***** INFORMATION ACROSS 7 BLOCKS (K=1,7) *****;                        00006400
628      ** FUEL COST INFORMATION PER RATE PERIOD ACROSS BLOCKS **;              00006410
629      ARRAY GWBCST (K) GWBCST1 GWBCST2 GWBCST3 GWBCST4 GWBCST5 GWBCST6         00006420
630                 GWBCST7;                                                     00006430
631      ARRAY GSBCST (K) GSBCST1 GSBCST2 GSBCST3 GSBCST4 GSBCST5 GSBCST6         00006440
632                 GSBCST7;                                                     00006450
633      ARRAY GWBBEG (K) GWBBEG1 GWBBEG2 GWBBEG3 GWBBEG4 GWBBEG5 GWBBEG6         00006460
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634                        GWBBEG7;                                               00006470
635         ARRAY GSBBEG (K) GSBBEG1 GSBBEG2 GSBBEG3 GSBBEG4 GSBBEG5 GSBBEG6       00006480
636                        GSBBEG7;                                               00006490
637         ARRAY GWBEND (K) GWBEND1 GWBEND2 GWBEND3 GWBEND4 GWBEND5 GWBEND6       00006500
638                        GWBEND7;                                               00006510
639         ARRAY GSBEND (K) GSBEND1 GSBEND2 GSBEND3 GSBEND4 GSBEND5 GSBEND6       00006520
640                        GSBEND7;                                               00006530
641         ** FUEL ADJUSTMENT INFORMATION **;                                    00006540
642         ARRAY GA (L) GFAJAN GFAFEB GFAMAR GFAAPR GFAMAY GFAJUN GFAJUL GFAAUG   00006550
643                   GFASEP GFAOCT GFANOV GFADEC;                                00006560
644         ARRAY GFACR (M) $ GFACR1 GFACR2 GFACR3 GFACR4;                        00006570
645                                                                               00006580
646         **************** CREATE ARRAYS FOR OIL VARIABLES ****************;     00006590
647         ARRAY OMRPBEG (J) V8025 V8029 V8033 V8037 V8041 V8045;                00006600
648         ARRAY ODRPBEG (J) V8026 V8030 V8034 V8038 V8042 V8046;                00006610
649         ARRAY OMRPEND (J) V8027 V8031 V8035 V8039 V8043 V8047;                00006620
650         ARRAY ODRPEND (J) V8028 V8032 V8036 V8040 V8044 V8048;                00006630
651         ARRAY OILCOST (J) V8066 V8076 V8086 V8096 V8106 V8116;                00006640
652                                                                               00006650
653         DJAN=31;                                                              00006660
654         DFEB=28;                                                              00006670
655         DMAR=31;                                                              00006680
656         DAPR=30;                                                              00006690
657         DMAY=31;                                                              00006700
658         DJUN=30;                                                              00006710
659         DJUL=31;                                                              00006720
660         OAUG=31;                                                              00006730
661         DSEP=30;                                                              00006740
662         DOCT=31;                                                              00006750
663         DNOV=30;                                                              00006760
664         DDEC=31;                                                              00006770
665         ARRAY MONTH (L) DJAN DFEB DMAR DAPR DMAY DJUN DJUL DAUG DSEP DOCT      00006780
666                   DNOV DDEC;                                                  00006790
667         AVDMONTH=365/12;                                                      00006800
668         FILE PRINT;                                                           00006810
669         ECOUNT = 0; * COUNTS NUMBER OF ELECTRIC COMPANIES IN EACH COUNTY;     00006820
670         GCOUNT = 0; * COUNTS NUMBER OF NATURAL GAS COMPANIES IN EACH COUNTY;  00006830
671                                                                               00006840
672         PUT ' ';                                                             00006850
673         PUT ' ';                                                             00006860
674         PUT '*********** STATE 'STATE' & COUNTY TYPE 'CNTYTYPE' **********'; 00006870
675                                                                               00006880
676         *******************************************************************;  00006890
677         ************ CALCULATE THE UTILITY COSTS FOR ELECTRICITY ************; 00006900
678         *******************************************************************;  00006910
679                                                                               00006920
680         PUT ' ';                                                             00006930
681         PUT '****************************************************';          00006940
682         PUT '*************** E L E C T R I C I T Y **************';           00006950
683         PUT '****************************************************';          00006960
684                                                                               00006970
685         DO  I=1 TO 4;  * THERE ARE FOUR COMPANIES IN EACH COUNTY;             00006980
686          ** IF THERE IS NO COMPANY, GO TO END OF LOOP.;                       00006990
687          IF NODATA=9 THEN GOTO END1;                                          00007000
688          GENCOSTS=0; * INITIALIZE VAR FOR CAPACITY CHARGE FOR RATE PERIOD;    00007010
689          TOTALFA=0; * INITIALIZE VAR FOR SUMMING FUEL ADJUSTMENT COSTS;       00007020
690                                                                               00007030
691          PUT ' ';                                                            00007040
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692        PUT '**************** 'I' 'COMPNAME' ****************';              00007050
693                                                                            00007060
694        **************** S T E P  #  1 ************************;            00007070
695        **************** CALCULATE RATE PERIOD AVERAGE '***************';   00007080
696                                                                            00007090
697        ** FACTOR #1 : FUEL ADJUSTMENT COSTS **;                           00007100
698           DO L=1 TO 12;                                                    00007110
699              CREDIT=0;                                                     00007120
700                                                                            00007130
701              DO M=1 TO 4;                                                  00007140
702                 ** IF ALL FUEL ADJUSTMENTS ARE CREDITS, CHANGE TO NEGATIVE; 00007150
703                 ** THIS LOOP CHANGES ONE FA EACH PASS UNTIL ALL ARE CORRECT; 00007160
704                 IF (FACR='Z' AND M=1) THEN FA=0-FA;                        00007170
705                 ** CHANGE ALPHANUMERIC NOTATION TO NUMERIC VALUE **;       00007180
706                 IF FACR ='A' AND L=1   THEN FA=0-FA;                       00007190
707                 IF FACR ='B' AND L=2   THEN FA=0-FA;                       00007200
708                 IF FACR ='C' AND L=3   THEN FA=0-FA;                       00007210
709                 IF FACR ='D' AND L=4   THEN FA=0-FA;                       00007220
710                 IF FACR ='E' AND L=5   THEN FA=0-FA;                       00007230
711                 IF FACR ='F' AND L=6   THEN FA=0-FA;                       00007240
712                 IF FACR ='G' AND L=7   THEN FA=0-FA;                       00007250
713                 IF FACR ='H' AND L=8   THEN FA=0-FA;                       00007260
714                 IF FACR ='I' AND L=9   THEN FA=0-FA;                       00007270
715                 IF FACR ='J' AND L=10 THEN FA=0-FA;                        00007280
716                 IF FACR ='K' AND L=11 THEN FA=0-FA;                        00007290
717                 IF FACR ='L' AND L=12 THEN FA=0-FA;                        00007300
718              END;                                                          00007330
719              TOTALFA=TOTALFA + FA * MONTH;                                 00007340
720                                                                            00007350
721        PUT 'MONTH = ' L ' AND FUEL ADJUSTMENT = ' FA;                      00007360
722                                                                            00007370
723           END;                                                            00007380
724           AVFA= (TOTALFA / 365)*1000;                                      00007390
725           IF AVFA = . THEN AVFA = 0;                                       00007400
726                                                                            00007410
727        PUT '        AVERAGE FUEL ADJUSTMENT = ' AVFA;                      00007420
728                                                                            00007430
729           ** DETERMINE NUMBER OF DAYS IN EACH RATE PERIOD;                 00007440
730           DO J=1 TO NUMRP;                                                 00007450
731              NDMRP=0; * INITIALIZE VAR FOR # DAYS IN AVERAGE MONTH;        00007460
732              NWDRP=0; * INITIALIZE VAR FOR #WINTER DAYS/RATE PERIOD;       00007470
733              NSDRP=0; * INITIALIZE VAR FOR #SUMMER DAYS/RATE PERIOD;       00007480
734                                                                            00007490
735              DO L=MRPBEG TO MRPEND;                                        00007500
736                 NDMRP=NDMRP + MONTH; * NDMRP-TTL # DAYS IN MONTHS OF RP;   00007510
737              ***** CALCULATE IF THERE ARE NO SEASONS;                      00007520
738                 IF SUMBEG=88 THEN DO;                                      00007530
739                    IF MRPBEG = MRPEND THEN DO;                             00007540
740                       NWDRP = DRPEND - DRPBEG + 1;                         00007550
741                       GOTO END10;                                          00007560
742                    END;                                                    00007570
743                    IF L=MRPBEG THEN NWDRP=NWDRP + MONTH - DRPBEG + 1;      00007580
744                    ELSE IF L = MRPEND THEN NWDRP=NWDRP + DRPEND;           00007590
745                    ELSE NWDRP=NWDRP + MONTH;                               00007600
746                    NSDRP = 0;                                              00007610
747                    GOTO END2;                                              00007620
748                 END;                                                       00007630
749              ***** CALCULATE IF THERE ARE PEAK/OFF-PEAK SEASONS;           00007640
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750                      ** FIRST : FOR SUMMER MONTHS;                              00007650
751                       IF SUMBEG <= L <= SUMEND THEN DO;                         00007660
752                        IF MRPBEG = MRPEND THEN DO;                              00007670
753                           SWDRP = DRPEND - DRPBEG + 1;                          00007680
754                           GOTO END10;                                          00007690
755                        END;                                                    00007700
756                        IF L=MRPBEG THEN NSDRP=NSDRP + MONTH - DRPBEG + 1;       00007710
757                        ELSE IF L = MRPEND THEN NSDRP=NSDRP + DRPEND;            00007720
758                        ELSE NSDRP=NSDRP + MONTH;                               00007730
759                        GOTO END2;                                              00007740
760                       END;                                                     00007750
761                    ** SECOND : FOR WINTER (BASE) MONTHS;                       00007760
762                       IF L >= WINBEG OR L <= WINEND THEN DO;                    00007770
763                        IF MRPBEG = MRPEND THEN DO;                              00007780
764                           NWDRP = DRPEND - ORPBEG + 1;                          00007790
765                           GOTO END10;                                          00007800
766                        END;                                                    00007810
767                        IF L=MRPBEG THEN NWDRP=NWDRP + MONTH - DRPBEG + 1;       00007820
768                        ELSE IF L = MRPEND THEN NWDRP=NWDRP + DRPEND;            00007830
769                        ELSE NWORP=NWDRP + MONTH;                               00007840
770                       END;                                                     00007850
771               END2: END;                                                       00007860
772               END10: IF NSDRP = . THEN NSDRP = 0;                              00007870
773                      IF NWDRP = . THEN NWDRP = 0;                              00007880
774                      TNDRP = NSDRP + NWDRP;                                    00007890
775                                                                                00007900
776           PUT '           ****************************';                       00007910
777           PUT 'MONTH RATE PERIOD ' J ' BEGAN = ' MRPBEG;                       00007920
778           PUT 'MONTH RATE PERIOD ' J ' ENDED = ' MRPEND;                       00007930
779           PUT 'SUMMER DAYS IN RATE PERIOD ' J ' = ' NSDRP;                     00007940
780           PUT 'WINTER DAYS IN RATE PERIOD ' J ' = ' NWDRP;                     00007950
781           PUT ' TTL # DAYS IN RATE PERIOD ' J ' = ' TNDRP;                     00007960
782                                                                                00007970
783                   NMRP = MRPEND - MRPBEG + 1;                                  00007980
784                   AVDMRP = NDMRP / NMRP;                                       00007990
785                   USE=0;                                                       00008000
786                   WTUSE = 0; STUSE = 0; *INITIALIZE VAR FOR KWH USE COUNTER;    00008010
787                   WRPBILL = 0; * INITIALIZE VAR. FOR COSTS IN WINTER/RP;        00008020
788                   SRPBILL = 0; * INITIALIZE VAR. FOR COSTS IN SUMMER/RP;        00008030
789                                                                                00008040
790          ** FACTOR #2 : CUSTOMER & CAPACITY CHARGES PER RATE PERIOD ;          00008050
791                ** FIRST : DETERMINE CAPACITY CHG. FOR 1000 K USE IN BOTH       00008060
792                ** SUMMER AND  WINTER, USING EACH BLOCK;                        00008070
793                   DO K=1 TO 5;  *THERE ARE FIVE POSSIBLE BLOCKS FOR ELECTRICITY; 00008080
794                    IF K=1 THEN DO;                                             00008090
795                       IF (SBLKBEG NE 1 OR WBLKBEG NE 1) THEN                   00008100
796                       USE = 1000 - WBLKBEG + 1;                                00008110
797                    END;                                                        00008120
798                    IF USE=0 THEN USE=1000;                                     00008130
799                                                                                00008140
800                    IF STUSE = USE THEN GOTO ENDSUM;                            00008150
801                                                                                00008160
802                       IF SBLKEND GT 1000 THEN SBLKEND = 1000;                  00008170
803                       SBLKLENG = SBLKEND - SBLKBEG + 1;                        00008180
804                       STUSE = STUSE + SBLKLENG;                                00008190
805                       SRPBILL = SRPBILL + SBLKCOST * SBLKLENG;                 00008200
806                       IF SRPBILL=. THEN SRPBILL=0;                             00008210
807                                                                                00008220
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808          ENDSUM: IF WTUSE = USE THEN GOTO ENDWIN;                  00008230
809                                                                    00008240
810              IF WBLKEND GT 1000 THEN WBLKEND = 1000;               00008250
811              WBLKLENG = WBLKEND - WBLKBEG + 1;                     00008260
812              WTUSE = WTUSE + WBLKLENG;                             00008270
813              WRPBILL = WRPBILL + WBLKCOST * WBLKLENG;              00008280
814              IF WRPBILL=. THEN WRPBILL=O;                          00008290
815                                                                    00008300
816          ENDWIN:  END;  * CALCULATE NEXT BLOCK CHARGES;            00008310
817                                                                    00008320
818          ** SECOND : ADD CUSTOMER CHARGE TO SUMMER & WINTER BILLS; 00008330
819          ** MUST ALSO COMPUTE MONTHLY CC FOR NORTH ARK. ELEC. COOP.; 00008340
820      IF (CUSTCHG=8.88 AND COMPNAME='N.ARKANSAS.ELEC.COOP') THEN    00008350
821              CUSTCHG = AVDMRP * (.35);                             00008360
822                                                                    00008370
823      PUT 'BASE CAPACITY CHARGE   = 'WRPBILL;                       00008380
824      PUT 'BASE CUSTOMER CHARGE   = 'CUSTCHG;                       00008390
825                                                                    00008400
826          WRPBILL = WRPBILL + CUSTCHG;                              00008410
827          IF (WRPBILL = . OR WRPBILL = CUSTCHG) THEN WRPBILL = O.;  00008420
828                                                                    00008430
829      PUT 'BASE RATE PERIOD BILL  = 'WRPBILL;                       00008440
830      PUT 'SUMMER CAPACITY CHARGE = 'SRPBILL;                       00008450
831      PUT 'SUMMER CUSTOMER CHARGE = 'CUSTCHG;                       00008460
832                                                                    00008470
833          SRPBILL = SRPBILL + CUSTCHG;                              00008480
834          IF (SRPBILL = CUSTCHG OR SRPBILL = .) THEN SRPBILL = O;   00008490
835                                                                    00008500
836      PUT 'SUMMER RATE PERIOD BILL= 'SRPBILL;                       00008510
837                                                                    00008520
838          ** THIRD : CALCULATE SINGLE RATE PERIOD BILL BASED ON     00008530
839          ** # DAYS WINTER & SUMMER BILLS WERE IN EFFECT. MUST      00008540
840          ** ALSO MAKE POWER COST ADJUSTMENT FOR GULF POWER COMPANY. 00008550
841          ** CHARGED ADDITIONAL 3.4% OF CAPACITY COSTS.             00008560
842          IF (SUMBEG = 88 OR SRPBILL = O) THEN RPBILL = WRPBILL;    00008570
843          ELSE RPBILL = (WRPBILL * NWDRP + SRPBILL * NSDRP)/TNDRP;  00008580
844          IF COMPNAME = 'GULF.POWER.COMPANY' THEN                   00008590
845              RPBILL = RPBILL + (RPBILL * .034762);                 00008600
846                                                                    00008610
847      PUT 'AVERAGE BILL FOR RATE PERIOD = ' RPBILL;                 00008620
848                                                                    00008630
849          GENCOSTS = GENCOSTS + RPBILL * TNDRP;                     00008640
850      END;  * CALCULATE NEXT RATE PERIOD BILL;                      00008650
851      GENCOSTS = GENCOSTS / 365;                                    00008660
852                                                                    00008670
853      ** FACTOR #3: OTHER COST ADJUSTMENTS;                         00008680
854          IF RIDEREND = . THEN RIDEREND = O;                        00008690
855          IF RIDERBEG = . THEN RIDERBEG = O;                        00008700
856          IF RIDER = . THEN RIDER = O;                              00008710
857          NMRIDER = RIDEREND - RIDERBEG + 1;                        00008720
858          OTHERADJ = ((RIDER *1000) * NMRIDER)/12;                  00008730
859                                                                    00008740
860      PUT 'AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = ' GENCOSTS; 00008750
861      PUT 'AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = ' AVFA;      00008760
862      PUT 'AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS    = "OTHERADJ;  00008770
863                                                                    00008780
864      ************************* S T E P  #  2 ****************************;00008790
865      ******************* CALCULATE COMPANY AVERAGE *********************;00008800
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866                     ECMPBILL = GENCOSTS + AVFA + OTHERADJ;                                00008810
867                     IF ECMPBILL = . THEN ECMPBILL = 0;                                    00008820
868                     IF I = 1 THEN ECP1BILL = ECMPBILL;                                    00008830
869                     IF I = 2 THEN ECP2BILL = ECMPBILL;                                    00008840
870                     IF I = 3 THEN ECP3BILL = ECMPBILL;                                    00008850
871                     IF I = 4 THEN ECP4BILL = ECMPBILL;                                    00008860
872                                                                                           00008870
873                                                                                           00008880
874             PUT 'AVERAGE MONTHLY UTILITY BILL FOR COMPANY = ' ECMPBILL;                   00008890
875                                                                                           00008900
876             ECOUNT = ECOUNT + 1;                                                          00008910
877             END; * DO NEXT COMPANY;                                                       00008920
878                                                                                           00008930
879       *********************** S T E P  #  3 ****************************;00008940
880       ******************* CALCULATE COUNTY AVERAGE ********************;00008950
881                                                                                           00008960
882       END1: PUT ' ';                                                                      00008970
883       PUT '***** SUMMARY OF COUNTY ' CNTYTYPE' *****';                                    00008980
884       PUT '***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = ' ECOUNT;                       00008990
885                                                                                           00009000
886       ECNTBILL = 0; *INITIALIZE VAR FOR AVERAGE COUNTY BILL;                              00009010
887       ARRAY ECPBILL (I) ECP1BILL ECP2BILL ECP3BILL ECP4BILL;                              00009020
888       DO I=1 TO 4;                                                                        00009030
889           IF ECPBILL = . THEN ECPBILL = 0;                                                00009040
890           ECNTBILL = ECNTBILL + ECPBILL;                                                  00009050
891                                                                                           00009060
892       PUT '***** ' COMPNAME' AVERAGE BILL = ' ECPBILL;                                    00009070
893                                                                                           00009080
894       END;                                                                                00009090
895                                                                                           00009100
896       ECNTBILL = ECNTBILL/ECOUNT;                                                         00009110
897       ECNTBILL = ROUND(ECNTBILL,.01);                                                     00009120
898       EBTUCOST = ECNTBILL/3.412;                                                          00009121
899                                                                                           00009130
900       PUT '***** AVERAGE COUNTY ELECTRIC BILL = ' ECNTBILL;                               00009140
901       PUT '***** AVERAGE COUNTY ELECTRICITY COST = ' EBTUCOST;                            00009141
902                                                                                           00009150
903                                                                                           00009160
904       ***************************************************************;   00009170
905       ************ CALCULATE THE UTILITY COSTS FOR NATURAL GAS ***********;  00009180
906       ***************************************************************;   00009190
907                                                                                           00009200
908       PUT ' ';                                                                            00009210
909       PUT ' ';                                                                            00009220
910       PUT '*********************************************';              00009230
911       PUT '**************** N A T U R A L   G A S ***************';     00009240
912       PUT '*********************************************';              00009250
913                                                                                           00009260
914       DO I=1 TO 3;  * MAX OF THREE NATURAL GAS COMPANIES IN EACH COUNTY;  00009270
915         ** IF THERE IS NO COMPANY, GO TO END OF LOOP.;                   00009280
916         IF GNODATA=9 THEN GOTO END3;                                     00009290
917         GASCOSTS=0; * INITIALIZE VAR FOR CAPACITY CHARGE FOR RATE PERIOD;  00009300
918         TOTALGA=0; * INITIALIZE VAR FOR SUMMING GAS ADJUSTMENT COSTS;      00009310
919                                                                                           00009320
920       PUT ' ';                                                                            00009330
921       PUT '************** 'I' 'GCOMPNAM' ***************';             00009340
922                                                                                           00009350
923       ******************** S T E P  #  1 *********************;        00009360
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924        **************** CALCULATE RATE PERIOD AVERAGE ****************;        00009370
925                                                                               00009380
926        ** FACTOR #1 : GAS ADJUSTMENT COSTS **;                                00009390
927          DO L=1 TO 12;                                                        00009400
928                                                                               00009410
929              CREDIT = 0;                                                      00009420
930                                                                               00009430
931              DO M=1 TO 4;                                                     00009440
932                  ** IF ALL GAS ADJUSTMENTS ARE CREDITS, CHANGE TO NEGATIVE;   00009450
933                  ** THIS LOOP CHANGES ONE GA EACH PASS UNTIL ALL ARE CORRECT; 00009460
934                  IF (GFACR='Z' AND M=1) THEN GA=0-GA;                         00009470
935                  ** CHANGE ALPHANUMERIC NOTATION TO NUMERIC VALUE **;         00009480
936                  IF GFACR ='A' AND L=1 THEN FA=0-FA;                          00009490
937                  IF GFACR ='B' AND L=2 THEN FA=0-FA;                          00009500
938                  IF GFACR ='C' AND L=3 THEN FA=0-FA;                          00009510
939                  IF GFACR ='D' AND L=4 THEN FA=0-FA;                          00009520
940                  IF GFACR ='E' AND L=5 THEN FA=0-FA;                          00009530
941                  IF GFACR ='F' AND L=6 THEN FA=0-FA;                          00009540
942                  IF GFACR ='G' AND L=7 THEN FA=0-FA;                          00009550
943                  IF GFACR ='H' AND L=8 THEN FA=0-FA;                          00009560
944                  IF GFACR ='I' AND L=9 THEN FA=0-FA;                          00009570
945                  IF GFACR ='J' AND L=10 THEN FA=0-FA;                         00009580
946                  IF GFACR ='K' AND L=11 THEN FA=0-FA;                         00009590
947                  IF GFACR ='L' AND L=12 THEN FA=0-FA;                         00009600
948              END;                                                             00009630
949              TOTALGA=TOTALGA + GA * MONTH;                                    00009640
950                                                                               00009650
951        PUT 'MONTH = ' L ' AND GAS ADJUSTMENT = ' GA;                          00009660
952                                                                               00009670
953          END;                                                                 00009680
954          AVGA= (TOTALGA / 365)*100;                                           00009690
955          IF AVGA = . THEN AVGA = 0;                                           00009700
956                                                                               00009710
957        PUT '        AVERAGE GAS ADJUSTMENT = ' AVGA;                          00009720
958                                                                               00009730
959          ** DETERMINE NUMBER OF DAYS IN EACH RATE PERIOD;                     00009740
960          DO J=1 TO GNUMRP;                                                    00009750
961            GNDMRP=0; * INITIALIZE VAR FOR # DAYS IN AVERAGE MONTH;            00009760
962            GNWDRP=0; * INITIALIZE VAR FOR #WINTER DAYS/RATE PERIOD;           00009770
963            GNSDRP=0; * INITIALIZE VAR FOR #SUMMER DAYS/RATE PERIOD;           00009780
964                                                                               00009790
965            DO L=GMRPBEG TO GMRPEND;                                           00009800
966              GNDMRP=GNDMRP + MONTH; * GNDMRP=TTL # DAYS IN MONTHS OF RP;      00009810
967            ***** CALCULATE IF THERE ARE NO SEASONS;                          00009820
968              IF GSUMBEG=88 THEN DO;                                           00009830
969                IF GMRPBEG = GMRPEND THEN DO;                                  00009840
970                    GNWDRP = GDRPEND - GDRPBEG + 1;                            00009850
971                    GOTO END12;                                               00009860
972                END;                                                           00009870
973                IF L=GMRPBEG THEN GNWDRP=GNWDRP + MONTH - GDRPBEG + 1;         00009880
974                ELSE IF L = GMRPEND THEN GNWDRP=GNWDRP + GDRPEND;              00009890
975                ELSE GNWDRP=GNWDRP + MONTH;                                    00009900
976                GNSDRP = 0;                                                    00009910
977                GOTO END4;                                                     00009920
978                END;                                                           00009930
979            ***** CALCULATE IF THERE ARE PEAK/OFF-PEAK SEASONS;               00009940
980              ** FIRST : FOR SUMMER MONTHS;                                    00009950
981              IF GSUMBEG <= L <= GSUMEND THEN DO;                              00009960
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982                     IF GMRPBEG = GMRPEND THEN DO;                          00009970
983                        GNSDRP = GDRPEND - GDRPBEG + 1;                      00009980
984                        GOTO END12;                                          00009990
985                     END;                                                    00010000
986                     IF L=GMRPBEG THEN GNSDRP=GNSDRP + MONTH - GDRPBEG + 1;  00010010
987                     ELSE IF L = GMRPEND THEN GNSDRP=GNSDRP + GDRPEND;       00010020
988                     ELSE GNSDRP=GNSDRP + MONTH;                            00010030
989                     GOTO END4;                                             00010040
990                     END;                                                    00010050
991                  ** SECOND : FOR WINTER (BASE) MONTHS;                      00010060
992                  IF L >= GWINBEG OR L <= GWINEND THEN DO;                   00010070
993                     IF GMRPBEG = GMRPEND THEN DO;                          00010080
994                        GNWDRP = GDRPEND - GDRPBEG + 1;                      00010090
995                        GOTO END12;                                          00010100
996                     END;                                                    00010110
997                     IF L=GMRPBEG THEN GNWDRP=GNWDRP + MONTH - GDRPBEG + 1;  00010120
998                     ELSE IF L = GMRPEND THEN GNWDRP=GNWDRP + GDRPEND;       00010130
999                     ELSE GNWDRP=GNWDRP + MONTH;                            00010140
1000                    END;                                                    00010150
1001        END4: END;                                                          00010160
1002        END12: IF GNSDRP = . THEN GNSDRP = O;                               00010170
1003              IF GNWDRP = . THEN GNWDRP = O;                                00010180
1004              GTNDRP = GNSDRP + GNWDRP;                                     00010190
1005                                                                            00010200
1006        PUT '         ****************************';                        00010210
1007        PUT 'MONTH RATE PERIOD ' J ' BEGAN = ' GMRPBEG;                     00010220
1008        PUT 'MONTH RATE PERIOD ' J ' ENDED = ' GMRPEND;                     00010230
1009        PUT 'SUMMER DAYS IN RATE PERIOD ' J ' = ' GNSDRP;                   00010240
1010        PUT 'WINTER DAYS IN RATE PERIOD ' J ' = ' GNWDRP;                   00010250
1011        PUT ' TTL # DAYS IN RATE PERIOD ' J ' = ' GTNDRP;                   00010260
1012                                                                            00010270
1013              GNMRP = GMRPEND - GMRPBEG + 1;                               00010280
1014              GAVDMRP = GNDMRP / GNMRP;                                     00010290
1015              GASUSE=O;                                                     00010300
1016              GWTUSE = O; GSTUSE = O; *INITIALIZE VAR FOR MCF USE COUNTER;  00010310
1017              GWRPBILL = O; * INITIALIZE VAR. FOR COSTS IN WINTER/RP;       00010320
1018              GSRPBILL = O; * INITIALIZE VAR. FOR COSTS IN SUMMER/RP;       00010330
1019                                                                            00010340
1020        ** FACTOR #2 : CUSTOMER & CAPACITY CHARGES PER RATE PERIOD ;        00010350
1021            ** FIRST : DETERMINE CAPACITY CHG. FOR 100 MCF DF GAS IN BOTH   00010360
1022            ** SUMMER AND  WINTER, USING EACH BLOCK;                        00010370
1023            DO K=1 TO 7;  *THERE ARE SEVEN POSSIBLE BLOCKS FOR NATURAL GAS; 00010380
1024            *** CALCULATE BILL WHEN UNIT IS CCF, SO USE 1000 CCF ;          00010390
1025              IF GUNITRP = 1 THEN DO;                                       00010400
1026                                                                            00010410
1027              IF K=1 THEN DD;                                              00010420
1028                 IF (GSBBEG NE O QR GWBBEG NE O) THEN                       00010430
1029                 GASUSE = 1000 - GWBBEG ;                                   00010440
1030              END;                                                          00010450
1031              IF GASUSE=O THEN GASUSE=1000;                                 00010460
1032              IF GSTUSE = GASUSE THEN GOTO ENDGSUM;                         00010470
1033                                                                            00010480
1034                 IF GSBEND GE 999 THEN GSBEND = 1000;                       00010490
1035                 GSBLENG = GSBEND - GSBBEG;                                 00010500
1036                 GSTUSE = GSTUSE + GSBLENG;                                 00010510
1037                 GSRPBILL = GSRPBILL + GSBCST * GSBLENG;                    00010520
1038                 IF GSRPBILL=. THEN GSRPBILL=O;                             00010530
1039                                                                            00010540
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1040            ENDGSUM: IF GWTUSE = GASUSE THEN GOTO ENDZ;              00010550
1041                     IF GWBEND GE 999 THEN GWBEND = 1000;            00010560
1042                     GWBLENG = GWBEND - GWBBEG;                      00010570
1043                     GWTUSE = GWTUSE + GWBLENG;                      00010580
1044                     GWRPBILL = GWRPBILL + GWBCST * GWBLENG;         00010590
1045                     IF GWRPBILL=. THEN GWRPBILL=0;                  00010600
1046                                                                     00010610
1047                  GOTO ENDZ;                                         00010620
1048              END;                                                   00010630
1049                                                                     00010640
1050              IF K=1 THEN DO;                                        00010650
1051                  IF (GSBBEG NE 0 OR GWBBEG NE 0) THEN               00010660
1052                  GASUSE = 100 - GWBBEG ;                            00010670
1053              END;                                                   00010680
1054              IF GASUSE=0 THEN GASUSE=100;                           00010690
1055              IF GSTUSE = GASUSE THEN GOTO ENDG2SUM;                 00010700
1056                                                                     00010710
1057                  IF GSBEND GT 100 THEN GSBEND = 100;                00010720
1058                  GSBLENG = GSBEND - GSBBEG;                         00010730
1059                  GSTUSE = GSTUSE + GSBLENG;                         00010740
1060                  GSRPBILL = GSRPBILL + GSBCST * GSBLENG;            00010750
1061                  IF GSRPBILL=. THEN GSRPBILL=0;                     00010760
1062                                                                     00010770
1063           ENDG2SUM: IF GWTUSE = GASUSE THEN GOTO ENDZ;             00010780
1064                     IF GWBEND GT 100 THEN GWBEND = 100;             00010790
1065                     GWBLENG = GWBEND - GWBBEG;                      00010800
1066                     GWTUSE = GWTUSE + GWBLENG;                      00010810
1067                     GWRPBILL = GWRPBILL + GWBCST * GWBLENG;         00010820
1068                     IF GWRPBILL=. THEN GWRPBILL=0;                  00010830
1069                                                                     00010840
1070                                                                     00010850
1071      ENDZ: END;  * CALCULATE NEXT BLOCK CHARGES;                   00010860
1072                                                                     00010870
1073                                                                     00010880
1074           ** SECOND : ADD CUSTOMER CHARGE TO SUMMER & WINTER BILLS; 00010890
1075                                                                     00010900
1076   PUT 'BASE CAPACITY CHARGE    = 'GWRPBILL;                         00010910
1077   PUT 'BASE CUSTOMER CHARGE    = 'GCSTCHG;                          00010920
1078                                                                     00010930
1079           GWRPBILL = GWRPBILL + GCSTCHG;                            00010940
1080           IF (GWRPBILL = . OR GWRPBILL = GCSTCHG) THEN GWRPBILL = 0.; 00010950
1081                                                                     00010960
1082   PUT 'BASE RATE PERIOD BILL   = 'GWRPBILL;                         00010970
1083   PUT 'SUMMER CAPACITY CHARGE = 'GSRPBILL;                          00010980
1084   PUT 'SUMMER CUSTOMER CHARGE = 'GCSTCHG;                           00010990
1085                                                                     00011000
1086           GSRPBILL = GSRPBILL + GCSTCHG;                            00011010
1087           IF (GSRPBILL = GCSTCHG OR GSRPBILL = .) THEN GSRPBILL = 0; 00011020
1088                                                                     00011030
1089   PUT 'SUMMER RATE PERIOD BILL= 'GSRPBILL;                          00011040
1090                                                                     00011050
1091           ** THIRD : CALCULATE SINGLE RATE PERIOD BILL BASED ON     00011060
1092           ** # DAYS WINTER & SUMMER BILLS WERE IN EFFECT;           00011070
1093           IF (GSUMBEG = 88 OR GSRPBILL = 0) THEN GRPBILL = GWRPBILL; 00011080
1094           ELSE GRPBILL = (GWRPBILL * GNWDRP + GSRPBILL * GNSDRP)/GTNDRP; 00011090
1095                                                                     00011100
1096   PUT 'AVERAGE BILL FOR RATE PERIOD = ' GRPBILL;                    00011110
1097                                                                     00011120
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1098          GASCOSTS = GASCOSTS + GRPBILL * GTNDRP;                        00011130
1099       END;  * CALCULATE NEXT RATE PERIOD BILL;                         00011140
1100       GASCOSTS = GASCOSTS / 365;                                       00011150
1101                                                                        00011160
1102    ** FACTOR #3: OTHER COST ADJUSTMENTS;                               00011170
1103       IF RIDEREND = . THEN RIDEREND = 0;                               00011180
1104       IF RIDERBEG = . THEN RIDERBEG = 0;                               00011190
1105       IF RIDER = . THEN RIDER = 0;                                     00011200
1106       NMRIDER = RIDEREND - RIDERBEG + 1;                               00011210
1107       OTHERADJ = ((RIDER *100) * NMRIDER)/12;                          00011220
1108                                                                        00011230
1109    PUT 'AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = ' GASCOSTS;     00011240
1110    PUT 'AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = ' AVGA;             00011250
1111    PUT 'AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = ' OTHERADJ;         00011260
1112                                                                        00011270
1113    *************************** S T E P  # 2  ***************************;00011280
1114    ******************** CALCULATE COMPANY AVERAGE ********************;  00011290
1115                                                                        00011300
1116       GCMPBILL = GASCOSTS + AVGA + OTHERADJ;                           00011310
1117       IF GCMPBILL = . THEN GCMPBILL = 0;                               00011320
1118       IF I = 1 THEN GCM1BILL = GCMPBILL;                               00011330
1119       IF I = 2 THEN GCM2BILL = GCMPBILL;                               00011340
1120       IF I = 3 THEN GCM3BILL = GCMPBILL;                               00011350
1121       IF I = 4 THEN GCM4BILL = GCMPBILL;                               00011360
1122                                                                        00011370
1123    PUT 'AVERAGE MONTHLY UTILITY BILL FOR COMPANY = ' GCMPBILL;         00011380
1124                                                                        00011390
1125       GCOUNT = GCOUNT + 1;                                             00011400
1126    END; * DO NEXT COMPANY;                                             00011410
1127                                                                        00011420
1128    ********************** S T E P  # 3  **********************;        00011430
1129    ******************** CALCULATE COUNTY AVERAGE ********************;  00011440
1130                                                                        00011450
1131    END3: PUT ' ';                                                     00011460
1132    PUT '***** SUMMARY OF COUNTY ' CNTYTYPE' *****';                    00011470
1133    PUT '***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = ' GCOUNT;    00011480
1134                                                                        00011490
1135    GCNTBILL = 0; *INITIALIZE VAR FOR AVERAGE COUNTY BILL;              00011500
1136    ARRAY GCMBILL (I) GCM1BILL GCM2BILL GCM3BILL GCM4BILL;              00011510
1137    DO I=1 TO 3;                                                        00011520
1138       IF GCMBILL = . THEN GCMBILL = 0;                                 00011530
1139       GCNTBILL = GCNTBILL + GCMBILL;                                   00011540
1140                                                                        00011550
1141    PUT '***** ' GCOMPNAM' AVERAGE BILL = ' GCMBILL;                    00011560
1142                                                                        00011570
1143    END;                                                               00011580
1144                                                                        00011590
1145    GCNTBILL = GCNTBILL/GCOUNT;                                         00011600
1146    GCNTBILL = ROUND(GCNTBILL,.01);                                     00011610
1147    GBTUCOST = GCNTBILL/102.7;                                          00011611
1148                                                                        00011620
1149    PUT '***** AVERAGE COUNTY NATURAL GAS BILL = ' GCNTBILL;            00011630
1150    PUT '***** AVERAGE COUNTY NATURAL GAS PRICE = ' GBTUCOST;           00011631
1151                                                                        00011640
1152    IF STATE NE 7 THEN GOTO ENDCNTY;                                    00011650
1153    ****************************************************************;   00011660
1154    ************ CALCULATE THE UTILITY COSTS FOR OIL COMPANY ************; 00011670
1155    ****************************************************************;   00011680
```

```
1156        .                                                                          00011690
1157        PUT ' ';                                                                   00011700
1158        PUT '*****************************************************';                00011710
1159        PUT '*************** O I L   C O M P A N Y ***************';                00011720
1160        PUT '*****************************************************';                00011730
1161                                                                                   00011740
1162        PUT ' ';                                                                   00011750
1163        PUT '********************** ' V8006 ' **********************';             00011760
1164        OCMPBILL = 0;                                                              00011761
1165        DO J = 1 TO V8011;                                                         00011770
1166           OTNDRP = 0;                                                             00011780
1167           DO L=OMRPBEG TO OMRPEND;                                                00011790
1168              IF OMRPBEG = OMRPEND THEN DO;                                        00011800
1169                 OTNDRP = ODRPEND - ODRPBEG + 1;                                   00011810
1170                 GOTO END14;                                                       00011820
1171              END;                                                                 00011830
1172                                                                                   00011840
1173              IF L=OMRPBEG THEN OTNDRP = OTNDRP + MONTH - DDRPBEG + 1;             00011850
1174              ELSE IF L=OMRPEND THEN OTNDRP = OTNDRP + ODRPEND;                    00011860
1175              ELSE OTNDRP = OTNDRP + MONTH;                                        00011870
1176           END;                                                                    00011880
1177        END14: IF OTNDRP = . THEN OTNDRP = 0;                                      00011890
1178                                                                                   00011900
1179        PUT '        *************************************';                       00011910
1180        PUT 'MONTH RATE PERIOD ' J ' BEGAN = ' OMRPBEG;                            00011920
1181        PUT 'MONTH RATE PERIOD ' J ' ENDED = ' OMRPEND;                            00011930
1182        PUT ' TTL # DAYS IN RATE PERIOD ' J ' = ' OTNDRP;                          00011940
1183                                                                                   00011941
1184          IF OILCOST = . THEN OILCOST = 0;                                         00011942
1185          ORPBILL = OILCOST * 150;                                                 00011950
1186          IF ORPBILL = . THEN DRPBILL = 0;                                         00011951
1187                                                                                   00011952
1188        PUT ' AVERAGE BILL FOR RATE PERIOD = ' ORPBILL;                            00011953
1189                                                                                   00011954
1190          OCMPBILL = OCMPBILL + ORPBILL * OTNDRP;                                  00011960
1191        END; * NEXT RATE PERIOD;                                                   00011970
1192                                                                                   00011971
1193                                                                                   00011973
1194        OCNTBILL = ROUND(OCMPBILL,.01);                                           00011980
1195        DGALCOST = OCNTBILL/150;                                                   00011981
1196                                                                                   00011982
1197        PUT 'AVERAGE MONTHLY UTILITY BILL FOR COMPANY/COUNTY = 'OCNTBILL;          00011983
1198                                                                                   00011984
```

APPENDIX C

SUMMARY OF RATE INFORMATION

FOR EACH COMPANY

··········ARKANSAS   LL··········

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************************************************************
*************** E L E C T R I C I T Y ***************
************************************************************

*************** 1  ARKANSAS.POWER&LIGHT  ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.007
MONTH = 2   AND FUEL ADJUSTMENT = 0.0053
MONTH = 3   AND FUEL ADJUSTMENT = 0.00714
MONTH = 4   AND FUEL ADJUSTMENT = 0.00938
MONTH = 5   AND FUEL ADJUSTMENT = 0.00725
MONTH = 6   AND FUEL ADJUSTMENT = 0.005
MONTH = 7   AND FUEL ADJUSTMENT = 0.00201
MONTH = 8   AND FUEL ADJUSTMENT = 0.00214
MONTH = 9   AND FUEL ADJUSTMENT = 0.01173
MONTH = 10  AND FUEL ADJUSTMENT = 0.01369
MONTH = 11  AND FUEL ADJUSTMENT = 0.01176
MONTH = 12  AND FUEL ADJUSTMENT = 0.00632
        AVERAGE FUEL ADJUSTMENT = 7.387808
        ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1   ENDED = 5
SUMMER DAYS IN RATE PERIOD 1   = 0
WINTER DAYS IN RATE PERIOD 1   = 135
 TTL # DAYS IN RATE PERIOD 1   = 135
BASE CAPACITY CHARGE   = 31.8
BASE CUSTOMER CHARGE   = 5.75
BASE RATE PERIOD BILL  = 37.55
SUMMER CAPACITY CHARGE = 34.5
SUMMER CUSTOMER CHARGE = 5.75
SUMMER RATE PERIOD BILL= 40.25
AVERAGE BILL FOR RATE PERIOD = 37.55
        ********************************
MONTH RATE PERIOD 2  BEGAN = 5
MONTH RATE PERIOD 2   ENDED = 10
SUMMER DAYS IN RATE PERIOD 2   = 122
WINTER DAYS IN RATE PERIOD 2   = 42
 TTL # DAYS IN RATE PERIOD 2   = 164
BASE CAPACITY CHARGE   = 33.6
BASE CUSTOMER CHARGE   = 7.52
BASE RATE PERIOD BILL  = 41.12
SUMMER CAPACITY CHARGE = 36.7
SUMMER CUSTOMER CHARGE = 7.52
SUMMER RATE PERIOD BILL= 44.22
AVERAGE BILL FOR RATE PERIOD = 43.4261
        ********************************
MONTH RATE PERIOD 3  BEGAN = 10
MONTH RATE PERIOD 3   ENDED = 12
SUMMER DAYS IN RATE PERIOD 3   = 0
WINTER DAYS IN RATE PERIOD 3   = 66
 TTL # DAYS IN RATE PERIOD 3   = 66
BASE CAPACITY CHARGE   = 43.1
BASE CUSTOMER CHARGE   = 8.95
BASE RATE PERIOD BILL  = 52.05
SUMMER CAPACITY CHARGE = 47.2
SUMMER CUSTOMER CHARGE = 8.95
```

SUMMER RATE PERIOD BILL= 56.15
AVERAGE BILL FOR RATE PERIOD = 52.05
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 42.81214
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 7.387808
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 50.19995

*************** 2 PETIT.JEAN.ELEC.COOP ****************
MONTH = 1 AND FUEL ADJUSTMENT = 0.00174
MONTH = 2 AND FUEL ADJUSTMENT = -0.0005
MONTH = 3 AND FUEL ADJUSTMENT = 0.00304
MONTH = 4 AND FUEL ADJUSTMENT = 0.00532
MONTH = 5 AND FUEL ADJUSTMENT = -0.00028
MONTH = 6 AND FUEL ADJUSTMENT = 0.0009
MONTH = 7 AND FUEL ADJUSTMENT = 0.00254
MONTH = 8 AND FUEL ADJUSTMENT = 0.00101
MONTH = 9 AND FUEL ADJUSTMENT = 0.00373
MONTH = 10 AND FUEL ADJUSTMENT = 0.00314
MONTH = 11 AND FUEL ADJUSTMENT = 0.0122
MONTH = 12 AND FUEL ADJUSTMENT = 0.00528
        AVERAGE FUEL ADJUSTMENT = 3.181014
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 3
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 90
 TTL # DAYS IN RATE PERIOD 1 = 90
BASE CAPACITY CHARGE   = 35
BASE CUSTOMER CHARGE   = 6
BASE RATE PERIOD BILL = 41
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 6
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 41
        ****
MONTH RATE PERIOD 2 BEGAN = 4
MONTH RATE PERIOD 2 ENDED = 4
SUMMER DAYS IN RATE PERIOD 2 = 0
WINTER DAYS IN RATE PERIOD 2 = 11
 TTL # DAYS IN RATE PERIOD 2 = 11
BASE CAPACITY CHARGE   = 42
BASE CUSTOMER CHARGE   = 6.5
BASE RATE PERIOD BILL = 48.5
SUMMER CAPACITY CHARGE = 42
SUMMER CUSTOMER CHARGE = 6.5
SUMMER RATE PERIOD BILL= 48.5
AVERAGE BILL FOR RATE PERIOD = 48.5
        ****
MONTH RATE PERIOD 3 BEGAN = 4
MONTH RATE PERIOD 3 ENDED = 12
SUMMER DAYS IN RATE PERIOD 3 = 122
WINTER DAYS IN RATE PERIOD 3 = 142
 TTL # DAYS IN RATE PERIOD 3 = 264
BASE CAPACITY CHARGE   = 49
BASE CUSTOMER CHARGE   = 6.5
BASE RATE PERIOD BILL = 55.5
SUMMER CAPACITY CHARGE = 49
SUMMER CUSTOMER CHARGE = 6.5
SUMMER RATE PERIOD BILL= 55.5

AVERAGE BILL FOR RATE PERIOD = 55.5
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 51.7137
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 3.181014
AVERAGE MONTHLY RIOER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 54.89471

*************** 3 FIRST.ELEC.COOP.CORP ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00039
MONTH = 2   AND FUEL ADJUSTMENT = 0.00269
MONTH = 3   AND FUEL ADJUSTMENT = -0.00052
MONTH = 4   AND FUEL ADJUSTMENT = 0.00089
MONTH = 5   AND FUEL ADJUSTMENT = 0.00257
MONTH = 6   AND FUEL ADJUSTMENT = -0.0011
MONTH = 7   AND FUEL ADJUSTMENT = 0
MONTH = 8   AND FUEL ADJUSTMENT = 0.00511
MONTH = 9   AND FUEL ADJUSTMENT = 0.01434
MONTH = 10 AND FUEL ADJUSTMENT = 0.00543
MONTH = 11 AND FUEL ADJUSTMENT = 0.00649
MONTH = 12 AND FUEL ADJUSTMENT = 0
        AVERAGE FUEL ADJUSTMENT = 3.003562
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 4
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 102
 TTL # DAYS IN RATE PERIOD 1 = 102
BASE CAPACITY CHARGE   = 31.74
BASE CUSTOMER CHARGE   = 7.25
BASE RATE PERIOD BILL   = 38.99
SUMMER CAPACITY CHARGE = 39.43
SUMMER CUSTOMER CHARGE = 7.25
SUMMER RATE PERIOD BILL= 46.68
AVERAGE BILL FOR RATE PERIOD = 38.99
        ****
MONTH RATE PERIOD 2 BEGAN = 4
MONTH RATE PERIOD 2 ENDED = 8
SUMMER DAYS IN RATE PERIOD 2 = 65
WINTER DAYS IN RATE PERIOD 2 = 49
 TTL # DAYS IN RATE PERIOD 2 = 114
BASE CAPACITY CHARGE   = 34.29
BASE CUSTOMER CHARGE   = 7.43
BASE RATE PERIOD BILL   = 41.72
SUMMER CAPACITY CHARGE = 46.455
SUMMER CUSTOMER CHARGE = 7.43
SUMMER RATE PERIOD BILL= 53.885
AVERAGE BILL FOR RATE PERIOD = 48.65618
        ****
MONTH RATE PERIOD 3 BEGAN = 8
MONTH RATE PERIOD 3 ENDED = 12
SUMMER DAYS IN RATE PERIOD 3 = 57
WINTER DAYS IN RATE PERIOD 3 = 92
 TTL # DAYS IN RATE PERIOD 3 = 149
BASE CAPACITY CHARGE   = 37.5
BASE CUSTOMER CHARGE   = 7.25
BASE RATE PERIOD BILL   = 44.75
SUMMER CAPACITY CHARGE = 50.4
SUMMER CUSTOMER CHARGE = 7.25
SUMMER RATE PERIOD BILL= 57.65
AVERAGE BILL FOR RATE PERIOD = 49.6849

AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 46.37489
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 3.003562
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 49.37845

***** SUMMARY OF COUNTY 1 *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 3
***** ARKANSAS.POWER&LIGHT   AVERAGE BILL = 50.19995
***** PETIT.JEAN.ELEC.COOP   AVERAGE BILL = 54.89471
***** FIRST.ELEC.COOP.CORP   AVERAGE BILL = 49.37845
*****   AVERAGE BILL = O
***** AVERAGE COUNTY ELECTRIC BILL = 51.49
***** AVERAGE COUNTY ELECTRICITY COST = 15.09086

****
**************** N A T U R A L   G A S **************
****

***** SUMMARY OF COUNTY 1 *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = O
*****   AVERAGE BILL = O
*****   AVERAGE BILL = O
*****   AVERAGE BILL = O
***** AVERAGE COUNTY NATURAL GAS BILL = .
***** AVERAGE COUNTY NATURAL GAS PRICE = .

ARKANSAS   LH

****
************** E L E C T R I C I T Y **************
****

**************** 1 ARKANSAS.POWER&LIGHT ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.007
MONTH = 2   AND FUEL ADJUSTMENT = 0.0053
MONTH = 3   AND FUEL ADJUSTMENT = 0.00714
MONTH = 4   AND FUEL ADJUSTMENT = 0.00938
MONTH = 5   AND FUEL ADJUSTMENT = 0.00725
MONTH = 6   AND FUEL ADJUSTMENT = 0.005
MONTH = 7   AND FUEL ADJUSTMENT = 0.00201
MONTH = 8   AND FUEL ADJUSTMENT = 0.00214
MONTH = 9   AND FUEL ADJUSTMENT = 0.01173
MONTH = 10 AND FUEL ADJUSTMENT = 0.01369
MONTH = 11 AND FUEL ADJUSTMENT = 0.01176
MONTH = 12 AND FUEL ADJUSTMENT = 0.00632
        AVERAGE FUEL ADJUSTMENT = 7.387808
        ****
MONTH RATE PERIOD 1   BEGAN = 1
MONTH RATE PERIOD 1   ENDED = 5
SUMMER DAYS IN RATE PERIOD 1 = O
WINTER DAYS IN RATE PERIOD 1 = 135
 TTL # DAYS IN RATE PERIOD 1 = 135
BASE CAPACITY CHARGE   = 31.8
BASE CUSTOMER CHARGE   = 5.75
BASE RATE PERIOD BILL = 37.55
SUMMER CAPACITY CHARGE = 34.5
SUMMER CUSTOMER CHARGE = 5.75

SUMMER RATE PERIOD BILL= 40.25
AVERAGE BILL FOR RATE PERIOD = 37.55
        ****
MONTH RATE PERIOD 2 BEGAN = 5
MONTH RATE PERIOD 2 ENDED = 10
SUMMER DAYS IN RATE PERIOD 2 = 122
WINTER DAYS IN RATE PERIOD 2 = 42
 TTL # DAYS IN RATE PERIOD 2 = 164
BASE CAPACITY CHARGE   = 33.6
BASE CUSTOMER CHARGE   = 7.52
BASE RATE PERIOD BILL = 41.12
SUMMER CAPACITY CHARGE = 36.7
SUMMER CUSTOMER CHARGE = 7.52
SUMMER RATE PERIOD BILL= 44.22
AVERAGE BILL FOR RATE PERIOD = 43.4261
        ****
MONTH RATE PERIOD 3 BEGAN = 10
MONTH RATE PERIOD 3 ENDED = 12
SUMMER DAYS IN RATE PERIOD 3 = 0
WINTER DAYS IN RATE PERIOD 3 = 66
 TTL # DAYS IN RATE PERIOD 3 = 66
BASE CAPACITY CHARGE   = 43.1
BASE CUSTOMER CHARGE   = 8.95
BASE RATE PERIOD BILL = 52.05
SUMMER CAPACITY CHARGE = 47.2
SUMMER CUSTOMER CHARGE = 8.95
SUMMER RATE PERIOD BILL= 56.15
AVERAGE BILL FOR RATE PERIOD = 52.05
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 42.81214
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 7.387808
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 50.19995

*************** 2 N.ARKANSAS.ELEC.COOP   ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00177
MONTH = 2   AND FUEL ADJUSTMENT = -0.00025
MONTH = 3   AND FUEL ADJUSTMENT = 0.00276
MONTH = 4   AND FUEL ADJUSTMENT = 0.00511
MONTH = 5   AND FUEL ADJUSTMENT = 0.00022
MONTH = 6   AND FUEL ADJUSTMENT = 0.00102
MONTH = 7   AND FUEL ADJUSTMENT = -0.00225
MONTH = 8   AND FUEL ADJUSTMENT = -0.00088
MONTH = 9   AND FUEL ADJUSTMENT = 0.00261
MONTH = 10 AND FUEL ADJUSTMENT = 0.00289
MONTH = 11 AND FUEL ADJUSTMENT = 0.01252
MONTH = 12 AND FUEL ADJUSTMENT = 0.00496
        AVERAGE FUEL ADJUSTMENT = 2.532521
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 3
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 86
 TTL # DAYS IN RATE PERIOD 1 = 86
BASE CAPACITY CHARGE   = 34.2
BASE CUSTOMER CHARGE   = 8.25
BASE RATE PERIOD BILL = 42.45
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 8.25
SUMMER RATE PERIOD BILL= 0

```
AVERAGE BILL FOR RATE PERIOD = 42.45
        ******************************
MONTH RATE PERIOD 2  BEGAN = 3
MONTH RATE PERIOD 2  ENDED = 6
SUMMER DAYS IN RATE PERIOD 2  = 50
WINTER DAYS IN RATE PERIOD 2  = 34
 TTL # DAYS IN RATE PERIOD 2  = 84
BASE CAPACITY CHARGE    = 40.4
BASE CUSTOMER CHARGE    = 8.25
BASE RATE PERIOD BILL   = 48.65
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 8.25
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 48.65
        ******************************
MONTH RATE PERIOD 3  BEGAN = 6
MONTH RATE PERIOD 3  ENDED = 12
SUMMER DAYS IN RATE PERIOD 3  = 103
WINTER DAYS IN RATE PERIOD 3  = 92
 TTL # DAYS IN RATE PERIOD 3  = 195
BASE CAPACITY CHARGE    = 35.5
BASE CUSTOMER CHARGE    = 10.7
BASE RATE PERIOD BILL   = 46.2
SUMMER CAPACITY CHARGE = 50
SUMMER CUSTOMER CHARGE = 10.7
SUMMER RATE PERIOD BILL= 60.7
AVERAGE BILL FOR RATE PERIOD = 53.85897
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 49.97205
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 2.532521
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 52.50458

***** SUMMARY OF COUNTY 2  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** ARKANSAS.POWER&LIGHT   AVERAGE BILL = 50.19995
***** N.ARKANSAS.ELEC.COOP   AVERAGE BILL = 52.50458
*****       AVERAGE BILL = 0
*****       AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 51.35
***** AVERAGE COUNTY ELECTRICITY COST = 15.04982


***************************************************
************** N A T U R A L   G A S **************
***************************************************

************** 1  ARKANSAS.WESTERN.GAS  **************
MONTH = 1   AND GAS ADJUSTMENT = 1.233
MONTH = 2   AND GAS ADJUSTMENT = 1.312
MONTH = 3   AND GAS ADJUSTMENT = 1.322
MONTH = 4   AND GAS ADJUSTMENT = 1.244
MONTH = 5   AND GAS ADJUSTMENT = 1.244
MONTH = 6   AND GAS ADJUSTMENT = 1.339
MONTH = 7   AND GAS ADJUSTMENT = 1.234
MONTH = 8   AND GAS ADJUSTMENT = 1.3415
MONTH = 9   AND GAS ADJUSTMENT = 1.38
MONTH = 10  AND GAS ADJUSTMENT = 1.5294
MONTH = 11  AND GAS ADJUSTMENT = 1.746
MONTH = 12  AND GAS ADJUSTMENT = 0.066
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        AVERAGE GAS ADJUSTMENT = 124.6775
        ****************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 62.7
BASE CUSTOMER CHARGE    = 2.5
BASE RATE PERIOD BILL   = 65.2
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 65.2
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 65.2
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = 124.6775
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 189.8775

***** SUMMARY OF COUNTY 2  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** ARKANSAS.WESTERN.GAS   AVERAGE BILL = 189.8775
*****      AVERAGE BILL = 0
*****      AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 189.88
***** AVERAGE COUNTY NATURAL GAS PRICE = 1.84888
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━━━ARKANSAS HL━━━

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***********************************************
************** E L E C T R I C I T Y **************
***********************************************

************** 1  SW.ELECTRIC.POWER.CO  **************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00229
MONTH = 2   AND FUEL ADJUSTMENT = 0.003
MONTH = 3   AND FUEL ADJUSTMENT = 0.0039
MONTH = 4   AND FUEL ADJUSTMENT = 0.00404
MONTH = 5   AND FUEL ADJUSTMENT = 0.005
MONTH = 6   AND FUEL ADJUSTMENT = 0.00713
MONTH = 7   AND FUEL ADJUSTMENT = 0.00758
MONTH = 8   AND FUEL ADJUSTMENT = 0.00826
MONTH = 9   AND FUEL ADJUSTMENT = 0.00782
MONTH = 10  AND FUEL ADJUSTMENT = 0.00682
MONTH = 11  AND FUEL ADJUSTMENT = 0.00744
MONTH = 12  AND FUEL ADJUSTMENT = 0.00649
        AVERAGE FUEL ADJUSTMENT = 5.828603
        *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 153
WINTER DAYS IN RATE PERIOD 1  = 212
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 21.5
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 26.5
SUMMER CAPACITY CHARGE = 32.5
SUMMER CUSTOMER CHARGE = 5
```

SUMMER RATE PERIOD BILL= 37.5
AVERAGE BILL FOR RATE PERIOD = 31.11096
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 31.11096
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 5.828603
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 36.93956

*************** 2 SWARK.ELECPOWER.COOP ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00236
MONTH = 2   AND FUEL ADJUSTMENT = 0.00604
MONTH = 3   AND FUEL ADJUSTMENT = 0.0085
MONTH = 4   AND FUEL ADJUSTMENT = 0.00526
MONTH = 5   AND FUEL ADJUSTMENT = 0.00788
MONTH = 6   AND FUEL ADJUSTMENT = 0.0036
MONTH = 7   AND FUEL ADJUSTMENT = 0.00497
MONTH = 8   AND FUEL ADJUSTMENT = 0.00988
MONTH = 9   AND FUEL ADJUSTMENT = 0.00932
MONTH = 10 AND FUEL ADJUSTMENT = 0.01932
MONTH = 11 AND FUEL ADJUSTMENT = 0.01059
MONTH = 12 AND FUEL ADJUSTMENT = 0.01072
        AVERAGE FUEL ADJUSTMENT = 8.232192
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 12
SUMMER DAYS IN RATE PERIOD 1 = 184
WINTER DAYS IN RATE PERIOD 1 = 181
 TTL # DAYS IN RATE PERIOD 1 = 365
BASE CAPACITY CHARGE   = 12.47
BASE CUSTOMER CHARGE   = 3
BASE RATE PERIOD BILL = 15.47
SUMMER CAPACITY CHARGE = 14.87
SUMMER CUSTOMER CHARGE = 3
SUMMER RATE PERIOD BILL= 17.87
AVERAGE BILL FOR RATE PERIOD = 16.67986
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 16.67986
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 8.232192
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 27
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 51.91205

*************** 3 RICH.MT.ELEC.COOP ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00181
MONTH = 2   AND FUEL ADJUSTMENT = -0.00035
MONTH = 3   AND FUEL ADJUSTMENT = 0.00314
MONTH = 4   AND FUEL ADJUSTMENT = 0.00509
MONTH = 5   AND FUEL ADJUSTMENT = -0.00027
MONTH = 6   AND FUEL ADJUSTMENT = 0.00123
MONTH = 7   AND FUEL ADJUSTMENT = -0.00259
MONTH = 8   AND FUEL ADJUSTMENT = 0.00157
MONTH = 9   AND FUEL ADJUSTMENT = 0.00574
MONTH = 10 AND FUEL ADJUSTMENT = 0.00542
MONTH = 11 AND FUEL ADJUSTMENT = 0.01521
MONTH = 12 AND FUEL ADJUSTMENT = 0.0092
        AVERAGE FUEL ADJUSTMENT = 3.767068
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 2
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 59
 TTL # DAYS IN RATE PERIOD 1 = 59

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BASE CAPACITY CHARGE    = 37.764
BASE CUSTOMER CHARGE    = 5.17
BASE RATE PERIOD BILL   = 42.934
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5.17
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 42.934
          *********************************
MONTH RATE PERIOD 2  BEGAN = 3
MONTH RATE PERIOD 2  ENDED = 6
SUMMER DAYS IN RATE PERIOD 2  = 61
WINTER DAYS IN RATE PERIOD 2  = 61
 TTL # DAYS IN RATE PERIOD 2  = 122
BASE CAPACITY CHARGE    = 45
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 50
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 50
          *********************************
MONTH RATE PERIOD 3  BEGAN = 7
MONTH RATE PERIOD 3  ENDED = 12
SUMMER DAYS IN RATE PERIOD 3  = 92
WINTER DAYS IN RATE PERIOD 3  = 92
 TTL # DAYS IN RATE PERIOD 3  = 184
BASE CAPACITY CHARGE    = 40.3
BASE CUSTOMER CHARGE    = 7.99
BASE RATE PERIOD BILL   = 48.29
SUMMER CAPACITY CHARGE = 52.45
SUMMER CUSTOMER CHARGE = 7.99
SUMMER RATE PERIOD BILL= 60.44
AVERAGE BILL FOR RATE PERIOD = 54.365
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY    = 51.05826
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 3.767068
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 3.44
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 58.26533

***** SUMMARY OF COUNTY 3  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 3
***** SW.ELECTRIC.POWER.CO   AVERAGE BILL = 36.93956
***** SWARK.ELECPOWER.COOP   AVERAGE BILL = 51.91205
***** RICH.MT.ELEC.COOP   AVERAGE BILL = 58.26533
*****      AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 49.04
***** AVERAGE COUNTY ELECTRICITY COST = 14.3728


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*************** N A T U R A L    G A S **************
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*************** 1  DEQUEEN.WATER.DEPT.  ***************
MONTH = 1   AND GAS ADJUSTMENT = .
MONTH = 2   AND GAS ADJUSTMENT = .
MONTH = 3   AND GAS ADJUSTMENT = .
MONTH = 4   AND GAS ADJUSTMENT = .
MONTH = 5   AND GAS ADJUSTMENT = .
MONTH = 6   AND GAS ADJUSTMENT = .
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MONTH = 7   AND GAS ADJUSTMENT = .
MONTH = 8   AND GAS ADJUSTMENT = .
MONTH = 9   AND GAS ADJUSTMENT = .
MONTH = 10  AND GAS ADJUSTMENT = .
MONTH = 11  AND GAS ADJUSTMENT = .
MONTH = 12  AND GAS ADJUSTMENT = .
         AVERAGE GAS ADJUSTMENT = 0
         *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1   ENDED = 5
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 151
 TTL # DAYS IN RATE PERIOD 1  = 151
BASE CAPACITY CHARGE    = 127.61
BASE CUSTOMER CHARGE    = 2.82
BASE RATE PERIOD BILL   = 130.43
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.82
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 130.43
         *********************************
MONTH RATE PERIOD 2  BEGAN = 6
MONTH RATE PERIOD 2   ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 214
 TTL # DAYS IN RATE PERIOD 2  = 214
BASE CAPACITY CHARGE    = 121.67
BASE CUSTOMER CHARGE    = 2.75
BASE RATE PERIOD BILL   = 124.42
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.75
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 124.42
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 126.9063
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = 0
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 126.9063

**************** 2  GILLHAM.WATER.DEPT.  ****************
MONTH = 1   AND GAS ADJUSTMENT = .
MONTH = 2   AND GAS ADJUSTMENT = .
MONTH = 3   AND GAS ADJUSTMENT = .
MONTH = 4   AND GAS ADJUSTMENT = .
MONTH = 5   AND GAS ADJUSTMENT = .
MONTH = 6   AND GAS ADJUSTMENT = .
MONTH = 7   AND GAS ADJUSTMENT = .
MONTH = 8   AND GAS ADJUSTMENT = .
MONTH = 9   AND GAS ADJUSTMENT = .
MONTH = 10  AND GAS ADJUSTMENT = .
MONTH = 11  AND GAS ADJUSTMENT = .
MONTH = 12  AND GAS ADJUSTMENT = .
         AVERAGE GAS ADJUSTMENT = 0
         *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1   ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 257.4
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BASE CUSTOMER CHARGE    = 3.5
BASE RATE PERIOD BILL   = 260.9
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 3.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 260.9
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 260.9
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 0
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 2.7
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 263.6


************** 3  LOCKESBURG.WATER.DPT  *****************
MONTH = 1   AND GAS ADJUSTMENT = .
MONTH = 2   AND GAS ADJUSTMENT = .
MONTH = 3   AND GAS ADJUSTMENT = .
MONTH = 4   AND GAS ADJUSTMENT = .
MONTH = 5   AND GAS ADJUSTMENT = .
MONTH = 6   AND GAS ADJUSTMENT = .
MONTH = 7   AND GAS ADJUSTMENT = .
MONTH = 8   AND GAS ADJUSTMENT = .
MONTH = 9   AND GAS ADJUSTMENT = .
MONTH = 10  AND GAS ADJUSTMENT = .
MONTH = 11  AND GAS ADJUSTMENT = .
MONTH = 12  AND GAS ADJUSTMENT = .
        AVERAGE GAS ADJUSTMENT = 0
        ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE   = 210.17
BASE CUSTOMER CHARGE   = 4.3
BASE RATE PERIOD BILL  = 214.47
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.3
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 214.47
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 214.47
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 0
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0.344
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 214.814


***** SUMMARY OF COUNTY 3  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 3
***** DEQUEEN.WATER.DEPT.   AVERAGE BILL = 126.9063
***** GILLHAM.WATER.DEPT.   AVERAGE BILL = 263.6
***** LOCKESBURG.WATER.DPT  AVERAGE BILL = 214.814
***** AVERAGE COUNTY NATURAL GAS BILL = 201.77
***** AVERAGE COUNTY NATURAL GAS PRICE = 1.964654
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*************************************************************
*************** E L E C T R I C I T Y ***************
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*************** 1  ARKANSAS.POWER&LIGHT  ***************
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MONTH =  1   AND FUEL ADJUSTMENT = 0.007
MONTH =  2   AND FUEL ADJUSTMENT = 0.0063
MONTH =  3   AND FUEL ADJUSTMENT = 0.00714
MONTH =  4   AND FUEL ADJUSTMENT = 0.00938
MONTH =  5   AND FUEL ADJUSTMENT = 0.00725
MONTH =  6   AND FUEL ADJUSTMENT = 0.005
MONTH =  7   AND FUEL ADJUSTMENT = 0.00201
MONTH =  8   AND FUEL ADJUSTMENT = 0.00214
MONTH =  9   AND FUEL ADJUSTMENT = 0.01173
MONTH = 10   AND FUEL ADJUSTMENT = 0.01369
MONTH = 11   AND FUEL ADJUSTMENT = 0.01176
MONTH = 12   AND FUEL ADJUSTMENT = 0.00632
         AVERAGE FUEL ADJUSTMENT = 7.387808
         *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 5
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 135
 TTL # DAYS IN RATE PERIOD 1  = 135
BASE CAPACITY CHARGE    = 31.8
BASE CUSTOMER CHARGE    = 5.75
BASE RATE PERIOD BILL   = 37.55
SUMMER CAPACITY CHARGE = 34.5
SUMMER CUSTOMER CHARGE = 5.75
SUMMER RATE PERIOD BILL= 40.25
AVERAGE BILL FOR RATE PERIOD = 37.55
         *******************************
MONTH RATE PERIOD 2  BEGAN = 5
MONTH RATE PERIOD 2  ENDED = 10
SUMMER DAYS IN RATE PERIOD 2  = 122
WINTER DAYS IN RATE PERIOD 2  = 42
 TTL # DAYS IN RATE PERIOD 2  = 164
BASE CAPACITY CHARGE    = 33.6
BASE CUSTOMER CHARGE    = 7.52
BASE RATE PERIOD BILL   = 41.12
SUMMER CAPACITY CHARGE = 36.7
SUMMER CUSTOMER CHARGE = 7.52
SUMMER RATE PERIOD BILL= 44.22
AVERAGE BILL FOR RATE PERIOD = 43.4261
         *******************************
MONTH RATE PERIOD 3  BEGAN = 10
MONTH RATE PERIOD 3  ENDED = 12
SUMMER DAYS IN RATE PERIOD 3  = 0
WINTER DAYS IN RATE PERIOD 3  = 66
 TTL # DAYS IN RATE PERIOD 3  = 66
BASE CAPACITY CHARGE    = 43.1
BASE CUSTOMER CHARGE    = 8.95
BASE RATE PERIOD BILL   = 52.05
SUMMER CAPACITY CHARGE = 47.2
SUMMER CUSTOMER CHARGE = 8.95
SUMMER RATE PERIOD BILL= 56.15
AVERAGE BILL FOR RATE PERIOD = 52.05
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 42.81214
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 7.387808
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY  = 50.19995

**************** 2  OUACHITA.ELEC.COOP.  ****************
MONTH = 1  AND FUEL ADJUSTMENT = -0.00033
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MONTH = 2   AND FUEL ADJUSTMENT = 0.00305
MONTH = 3   AND FUEL ADJUSTMENT = 0.0054
MONTH = 4   AND FUEL ADJUSTMENT = -0.00031
MONTH = 5   AND FUEL ADJUSTMENT = 0.00123
MONTH = 6   AND FUEL ADJUSTMENT = -0.00245
MONTH = 7   AND FUEL ADJUSTMENT = -0.00096
MONTH = 8   AND FUEL ADJUSTMENT = 0.00342
MONTH = 9   AND FUEL ADJUSTMENT = 0.00287.
MONTH = 10  AND FUEL ADJUSTMENT = 0.0214
MONTH = 11  AND FUEL ADJUSTMENT = 0.00582
MONTH = 12  AND FUEL ADJUSTMENT = 0.00592
         AVERAGE FUEL ADJUSTMENT = 3.785699
         *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 3
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 86
 TTL # DAYS IN RATE PERIOD 1  = 86
BASE CAPACITY CHARGE    = 35.735
BASE CUSTOMER CHARGE    = 7.84
BASE RATE PERIOD BILL   = 43.575
SUMMER CAPACITY CHARGE = 37.145
SUMMER CUSTOMER CHARGE = 7.84
SUMMER RATE PERIOD BILL= 44.985
AVERAGE BILL FOR RATE PERIOD = 43.575
         *********************************
MONTH RATE PERIOD 2  BEGAN = 3
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 153
WINTER DAYS IN RATE PERIOD 2  = 126
 TTL # DAYS IN RATE PERIOD 2  = 279
BASE CAPACITY CHARGE    = 39.35
BASE CUSTOMER CHARGE    = 8.04
BASE RATE PERIOD BILL   = 47.39
SUMMER CAPACITY CHARGE = 40.85
SUMMER CUSTOMER CHARGE = 8.04
SUMMER RATE PERIOD BILL= 48.89
AVERAGE BILL FOR RATE PERIOD = 48.21258
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 47.11989
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 3.785699
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY  = 50.90559

***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** ARKANSAS.POWER&LIGHT   AVERAGE BILL = 50.19995
***** OUACHITA.ELEC.COOP.  AVERAGE BILL = 50.90559
*****     AVERAGE BILL = 0
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 50.55
***** AVERAGE COUNTY ELECTRICITY COST = 14.81536


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*************** N A T U R A L   G A S ***************
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*************** 1  ARKLA.GAS.COMPANY  ***************
MONTH = 1  AND GAS ADJUSTMENT = 1.176
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MONTH = 2   AND GAS ADJUSTMENT = 1.166
MONTH = 3   AND GAS ADJUSTMENT = 1.27
MONTH = 4   AND GAS ADJUSTMENT = 1.275
MONTH = 5   AND GAS ADJUSTMENT = 1.278
MONTH = 6   AND GAS ADJUSTMENT = 1.305
MONTH = 7   AND GAS ADJUSTMENT = 1.365
MONTH = 8   AND GAS ADJUSTMENT = 1.343
MONTH = 9   AND GAS ADJUSTMENT = 1.403
MONTH = 10  AND GAS ADJUSTMENT = 1.457
MONTH = 11  AND GAS ADJUSTMENT = 1.488
MONTH = 12  AND GAS ADJUSTMENT = 1.471
        AVERAGE GAS ADJUSTMENT = 133.4077
        ****************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 345
TTL # DAYS IN RATE PERIOD 1  = 345
BASE CAPACITY CHARGE   = 83.16
BASE CUSTOMER CHARGE   = 2.65
BASE RATE PERIOD BILL  = 85.81
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.65
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 85.81
        ****************************
MONTH RATE PERIOD 2  BEGAN = 12
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 20
TTL # DAYS IN RATE PERIOD 2  = 20
BASE CAPACITY CHARGE   = 198.99
BASE CUSTOMER CHARGE   = 3.82
BASE RATE PERIOD BILL  = 202.81
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 3.82
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 202.81
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 92.22096
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE  = 133.4077
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 225.6286

***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** ARKLA.GAS.COMPANY  AVERAGE BILL = 225.6286
*****    AVERAGE BILL = 0
*****    AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 225.63
***** AVERAGE COUNTY NATURAL GAS PRICE = 2.196981
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************** E L E C T R I C I T Y *********
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************** 1  GULF.COAST.ELEC.COOP  **************
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174

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MONTH = 1    AND FUEL ADJUSTMENT = 0.015
MONTH = 2    AND FUEL ADJUSTMENT = 0.0137
MONTH = 3    AND FUEL ADJUSTMENT = 0.0111
MONTH = 4    AND FUEL ADJUSTMENT = 0.0138
MONTH = 5    AND FUEL ADJUSTMENT = 0.0139
MONTH = 6    AND FUEL ADJUSTMENT = 0.0136
MONTH = 7    AND FUEL ADJUSTMENT = 0.023
MONTH = 8    AND FUEL ADJUSTMENT = 0.0179
MONTH = 9    AND FUEL ADJUSTMENT = 0.0171
MONTH = 10   AND FUEL ADJUSTMENT = 0.0162
MONTH = 11   AND FUEL ADJUSTMENT = 0.0157
MONTH = 12   AND FUEL ADJUSTMENT = 0.0219
        AVERAGE FUEL ADJUSTMENT = 16.10575
        *********************************
MONTH RATE PERIOD 1   BEGAN = 1
MONTH RATE PERIOD 1   ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 47
BASE CUSTOMER CHARGE    = 4.8
BASE RATE PERIOD BILL   = 51.8
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.8
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 51.8
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 51.8
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 16.10575
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 67.90575


*************** 2  WEST.FLA.ELEC.COOP.  ***************
MONTH = 1    AND FUEL ADJUSTMENT = -0.00005
MONTH = 2    AND FUEL ADJUSTMENT = 0.00016
MONTH = 3    AND FUEL ADJUSTMENT = 0.005
MONTH = 4    AND FUEL ADJUSTMENT = 0.017
MONTH = 5    AND FUEL ADJUSTMENT = 0.038
MONTH = 6    AND FUEL ADJUSTMENT = 0.0049
MONTH = 7    AND FUEL ADJUSTMENT = -0.0009
MONTH = 8    AND FUEL ADJUSTMENT = 0.0029
MONTH = 9    AND FUEL ADJUSTMENT = 0.0043
MONTH = 10   AND FUEL ADJUSTMENT = 0.00015
MONTH = 11   AND FUEL ADJUSTMENT = 0.00077
MONTH = 12   AND FUEL ADJUSTMENT = 0.0081
        AVERAGE FUEL ADJUSTMENT = 6.747342
        *********************************
MONTH RATE PERIOD 1   BEGAN = 1
MONTH RATE PERIOD 1   ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 47.5
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 52.5
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 52.5
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 52.5
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AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 6.747342
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 59.24734

*************** 3 GULF.POWER.COMPANY ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00706
MONTH = 2   AND FUEL ADJUSTMENT = 0.00964
MONTH = 3   AND FUEL ADJUSTMENT = 0.00745
MONTH = 4   AND FUEL ADJUSTMENT = 0.00923
MONTH = 5   AND FUEL ADJUSTMENT = 0.00923
MONTH = 6   AND FUEL ADJUSTMENT = 0.00923
MONTH = 7   AND FUEL ADJUSTMENT = 0.00923
MONTH = 8   AND FUEL ADJUSTMENT = 0.00923
MONTH = 9   AND FUEL ADJUSTMENT = 0.00923
MONTH = 10 AND FUEL ADJUSTMENT = 0.00965
MONTH = 11 AND FUEL ADJUSTMENT = 0.00965
MONTH = 12 AND FUEL ADJUSTMENT = -0.00169
        AVERAGE FUEL ADJUSTMENT = 8.068712
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 5
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 122
 TTL # DAYS IN RATE PERIOD 1 = 122
BASE CAPACITY CHARGE   = 31.4
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL = 36.4
SUMMER CAPACITY CHARGE = 34.9
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 39.9
AVERAGE BILL FOR RATE PERIOD = 37.66534
        ****
MONTH RATE PERIOD 2 BEGAN = 5
MONTH RATE PERIOD 2 ENDED = 12
SUMMER DAYS IN RATE PERIOD 2 = 153
WINTER DAYS IN RATE PERIOD 2 = 62
 TTL # DAYS IN RATE PERIOD 2 = 215
BASE CAPACITY CHARGE   = 31.4
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL = 36.4
SUMMER CAPACITY CHARGE = 34.9
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 39.9
AVERAGE BILL FOR RATE PERIOD = 40.24262
        ****
MONTH RATE PERIOD 3 BEGAN = 12
MONTH RATE PERIOD 3 ENDED = 12
SUMMER DAYS IN RATE PERIOD 3 = 0
WINTER DAYS IN RATE PERIOD 3 = 28
 TTL # DAYS IN RATE PERIOD 3 = 28
BASE CAPACITY CHARGE   = 53.7
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL = 58.7
SUMMER CAPACITY CHARGE = 59
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 64
AVERAGE BILL FOR RATE PERIOD = 60.74053
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 40.95361
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 8.068712

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AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 49.02232

***** SUMMARY OF COUNTY 1  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 3
***** GULF.COAST.ELEC.COOP   AVERAGE BILL = 67.90575
***** WEST.FLA.ELEC.COOP.    AVERAGE BILL = 59.24734
***** GULF.POWER.COMPANY   AVERAGE BILL = 49.02232
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 58.73
***** AVERAGE COUNTY ELECTRICITY COST = 17.21278


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*************** N A T U R A L   G A S ***************
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***************** 1  CITY.OF.CHIPLEY  *****************
MONTH = 1   AND GAS ADJUSTMENT = 0
MONTH = 2   AND GAS ADJUSTMENT = 0
MONTH = 3   AND GAS ADJUSTMENT = 0
MONTH = 4   AND GAS ADJUSTMENT = 0
MONTH = 5   AND GAS ADJUSTMENT = 0
MONTH = 6   AND GAS ADJUSTMENT = 0
MONTH = 7   AND GAS ADJUSTMENT = 0
MONTH = 8   AND GAS ADJUSTMENT = 0
MONTH = 9   AND GAS ADJUSTMENT = 0
MONTH = 10  AND GAS ADJUSTMENT = 0
MONTH = 11  AND GAS ADJUSTMENT = 0
MONTH = 12  AND GAS ADJUSTMENT = 0
         AVERAGE GAS ADJUSTMENT = 0
         ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 7
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 187
 TTL # DAYS IN RATE PERIOD 1  = 187
BASE CAPACITY CHARGE    = 350.02
BASE CUSTOMER CHARGE    = 0
BASE RATE PERIOD BILL   = 350.02
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 0
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 350.02
         ********************************
MONTH RATE PERIOD 2  BEGAN = 7
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 178
 TTL # DAYS IN RATE PERIOD 2  = 178
BASE CAPACITY CHARGE    = 374.99
BASE CUSTOMER CHARGE    = 1
BASE RATE PERIOD BILL   = 375.99
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 1
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 375.99
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 362.6848
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = 0
```

AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 362.6848

***** SUMMARY OF COUNTY 1 *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** CITY.OF.CHIPLEY AVERAGE BILL = 362.6848
*****   AVERAGE BILL = O
*****   AVERAGE BILL = O
***** AVERAGE COUNTY NATURAL GAS BILL = 362.68
***** AVERAGE COUNTY NATURAL GAS PRICE = 3.531451

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************** E L E C T R I C I T Y **************
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************** 1 CHOCTAWHACHEE.ELCOOP **************
MONTH = 1   AND FUEL ADJUSTMENT = 0.0073
MONTH = 2   AND FUEL ADJUSTMENT = 0.00942
MONTH = 3   AND FUEL ADJUSTMENT = 0.00836
MONTH = 4   AND FUEL ADJUSTMENT = 0.00753
MONTH = 5   AND FUEL ADJUSTMENT = 0.00796
MONTH = 6   AND FUEL ADJUSTMENT = 0.00956
MONTH = 7   AND FUEL ADJUSTMENT = 0.01474
MONTH = 8   AND FUEL ADJUSTMENT = 0.01452
MONTH = 9   AND FUEL ADJUSTMENT = 0.0091
MONTH = 10 AND FUEL ADJUSTMENT = 0.00909
MONTH = 11 AND FUEL ADJUSTMENT = 0.00976
MONTH = 12 AND FUEL ADJUSTMENT = 0.0072
        AVERAGE FUEL ADJUSTMENT = 9.552137
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 12
SUMMER DAYS IN RATE PERIOD 1 = O
WINTER DAYS IN RATE PERIOD 1 = 365
 TTL # DAYS IN RATE PERIOD 1 = 365
BASE CAPACITY CHARGE   = 44
BASE CUSTOMER CHARGE   = 4.75
BASE RATE PERIOD BILL   = 48.75
SUMMER CAPACITY CHARGE = O
SUMMER CUSTOMER CHARGE = 4.75
SUMMER RATE PERIOD BILL = O
AVERAGE BILL FOR RATE PERIOD = 48.75
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY = 48.75
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 9.552137
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 58.30214

************** 2 GULF.POWER.COMPANY **************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00706
MONTH = 2   AND FUEL ADJUSTMENT = 0.00964
MONTH = 3   AND FUEL ADJUSTMENT = 0.00745
MONTH = 4   AND FUEL ADJUSTMENT = 0.00923
MONTH = 5   AND FUEL ADJUSTMENT = 0.00923
MONTH = 6   AND FUEL ADJUSTMENT = 0.00923
MONTH = 7   AND FUEL ADJUSTMENT = 0.00923
MONTH = 8   AND FUEL ADJUSTMENT = 0.00923

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MONTH = 9   AND FUEL ADJUSTMENT = 0.00923
MONTH = 10   AND FUEL ADJUSTMENT = 0.00965
MONTH = 11   AND FUEL ADJUSTMENT = 0.00965
MONTH = 12   AND FUEL ADJUSTMENT = -0.00169
        AVERAGE FUEL ADJUSTMENT = 8.068712
        ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 5
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 122
 TTL # DAYS IN RATE PERIOD 1  = 122
BASE CAPACITY CHARGE    = 31.4
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 36.4
SUMMER CAPACITY CHARGE = 34.9
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 39.9
AVERAGE BILL FOR RATE PERIOD = 37.66534
        ********************************
MONTH RATE PERIOD 2  BEGAN = 5
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 153
WINTER DAYS IN RATE PERIOD 2  = 62
 TTL # DAYS IN RATE PERIOD 2  = 215
BASE CAPACITY CHARGE    = 31.4
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 36.4
SUMMER CAPACITY CHARGE = 34.9
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 39.9
AVERAGE BILL FOR RATE PERIOD = 40.24262
        ********************************
MONTH RATE PERIOD 3  BEGAN = 12
MONTH RATE PERIOD 3  ENDED = 12
SUMMER DAYS IN RATE PERIOD 3  = 0
WINTER DAYS IN RATE PERIOD 3  = 28
 TTL # DAYS IN RATE PERIOD 3  = 28
BASE CAPACITY CHARGE    = 53.7
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 58.7
SUMMER CAPACITY CHARGE = 59
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 64
AVERAGE BILL FOR RATE PERIOD = 60.74053
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 40.95361
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 8.068712
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 49.02232

***** SUMMARY OF COUNTY 2  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** CHOCTAWHACHEE.ELCOOP  AVERAGE BILL = 58.30214
***** GULF.POWER.COMPANY  AVERAGE BILL = 49.02232
*****       AVERAGE BILL = 0
*****       AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 53.66
***** AVERAGE COUNTY ELECTRICITY COST = 15.72685
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**************************************************
***********  N A T U R A L   G A S  **************
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*****  SUMMARY OF COUNTY 2  *****
*****  NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 0
*****      AVERAGE BILL = 0
*****      AVERAGE BILL = 0
*****      AVERAGE BILL = 0
*****  AVERAGE COUNTY NATURAL GAS BILL = .
*****  AVERAGE COUNTY NATURAL GAS PRICE = .
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FLORIDA HL

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***********  E L E C T R I C I T Y  **************
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*************  1  GLADES.ELECTRIC.COOP  ************
MONTH = 1    AND FUEL ADJUSTMENT = 0.01197
MONTH = 2    AND FUEL ADJUSTMENT = 0.00419
MONTH = 3    AND FUEL ADJUSTMENT = 0.00412
MONTH = 4    AND FUEL ADJUSTMENT = 0.0097
MONTH = 5    AND FUEL ADJUSTMENT = 0.01193
MONTH = 6    AND FUEL ADJUSTMENT = 0.01151
MONTH = 7    AND FUEL ADJUSTMENT = -0.00045
MONTH = 8    AND FUEL ADJUSTMENT = 0.00191
MONTH = 9    AND FUEL ADJUSTMENT = 0.00169
MONTH = 10   AND FUEL ADJUSTMENT = 0.00289
MONTH = 11   AND FUEL ADJUSTMENT = 0.00315
MONTH = 12   AND FUEL ADJUSTMENT = 0.00165
        AVERAGE FUEL ADJUSTMENT = 5.35189
     **********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 7
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 192
 TTL # DAYS IN RATE PERIOD 1  = 192
BASE CAPACITY CHARGE   = 46.4
BASE CUSTOMER CHARGE   = 6
BASE RATE PERIOD BILL  = 52.4
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 6
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 52.4
     **********************************
MONTH RATE PERIOD 2  BEGAN = 7
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 173
 TTL # DAYS IN RATE PERIOD 2  = 173
BASE CAPACITY CHARGE   = 62
BASE CUSTOMER CHARGE   = 6.9
BASE RATE PERIOD BILL  = 68.9
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 6.9
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 68.9
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AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 60.22055
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 5.35189
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 65.57244


*************** 2  FLORIDA.POWER&LIGHT  ***************
MONTH = 1  AND FUEL ADJUSTMENT = 0.00359
MONTH = 2  AND FUEL ADJUSTMENT = 0.00992
MONTH = 3  AND FUEL ADJUSTMENT = 0.01073
MONTH = 4  AND FUEL ADJUSTMENT = 0.01475
MONTH = 5  AND FUEL ADJUSTMENT = 0.01475
MONTH = 6  AND FUEL ADJUSTMENT = 0.01475
MONTH = 7  AND FUEL ADJUSTMENT = 0.01475
MONTH = 8  AND FUEL ADJUSTMENT = 0.01475
MONTH = 9  AND FUEL ADJUSTMENT = 0.01475
MONTH = 10  AND FUEL ADJUSTMENT = 0.01149
MONTH = 11  AND FUEL ADJUSTMENT = 0.01149
MONTH = 12  AND FUEL ADJUSTMENT = 0.0132
       AVERAGE FUEL ADJUSTMENT = 12.41375
       ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = O
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 34.375
BASE CUSTOMER CHARGE    = 3.2
BASE RATE PERIOD BILL   = 37.575
SUMMER CAPACITY CHARGE = O
SUMMER CUSTOMER CHARGE = 3.2
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 37.575
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 37.575
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 12.41375
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 49.98875

***** SUMMARY OF COUNTY 3  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** GLADES.ELECTRIC.COOP  AVERAGE BILL = 65.57244
***** FLORIDA.POWER&LIGHT  AVERAGE BILL = 49.98875
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
***** AVERAGE COUNTY ELECTRIC BILL = 57.78
***** AVERAGE COUNTY ELECTRICITY COST = 16.93435


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*************** N A T U R A L   G A S ***************
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***** SUMMARY OF COUNTY 3  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = O
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
***** AVERAGE COUNTY NATURAL GAS BILL = .
***** AVERAGE COUNTY NATURAL GAS PRICE = .
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*************** E L E C T R I C I T Y **************
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************** 1  CLAY.ELECTRIC.COOPS.  ***************
MONTH = 1   AND FUEL ADJUSTMENT = .
MONTH = 2   AND FUEL ADJUSTMENT = .
MONTH = 3   AND FUEL ADJUSTMENT = .
MONTH = 4   AND FUEL ADJUSTMENT = .
MONTH = 5   AND FUEL ADJUSTMENT = .
MONTH = 6   AND FUEL ADJUSTMENT = .
MONTH = 7   AND FUEL ADJUSTMENT = .
MONTH = 8   AND FUEL ADJUSTMENT = .
MONTH = 9   AND FUEL ADJUSTMENT = .
MONTH = 10   AND FUEL ADJUSTMENT = .
MONTH = 11   AND FUEL ADJUSTMENT = .
MONTH = 12   AND FUEL ADJUSTMENT = .
        AVERAGE FUEL ADJUSTMENT = 0
        **********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE   = 45.25
BASE CUSTOMER CHARGE   = 5.5
BASE RATE PERIOD BILL  = 50.75
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 50.75
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 50.75
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 0
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 50.75

************** 2  FLORIDA.POWER&LIGHT  ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00359
MONTH = 2   AND FUEL ADJUSTMENT = 0.00992
MONTH = 3   AND FUEL ADJUSTMENT = 0.01073
MONTH = 4   AND FUEL ADJUSTMENT = 0.01475
MONTH = 5   AND FUEL ADJUSTMENT = 0.01475
MONTH = 6   AND FUEL ADJUSTMENT = 0.01475
MONTH = 7   AND FUEL ADJUSTMENT = 0.01475
MONTH = 8   AND FUEL ADJUSTMENT = 0.01475
MONTH = 9   AND FUEL ADJUSTMENT = 0.01475
MONTH = 10   AND FUEL ADJUSTMENT = 0.01149
MONTH = 11   AND FUEL ADJUSTMENT = 0.01149
MONTH = 12   AND FUEL ADJUSTMENT = 0.0132
        AVERAGE FUEL ADJUSTMENT = 12.41375
        ************************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
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BASE CAPACITY CHARGE    = 34.375
BASE CUSTOMER CHARGE    = 3.2
BASE RATE PERIOD BILL   = 37.575
SUMMER CAPACITY CHARGE  = O
SUMMER CUSTOMER CHARGE  = 3.2
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 37.575
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 37.575
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 12.41375
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 49.98875


***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** CLAY.ELECTRIC.COOPS.   AVERAGE BILL = 50.75
***** FLORIDA.POWER&LIGHT   AVERAGE BILL = 49.98875
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
***** AVERAGE COUNTY ELECTRIC BILL = 50.37
***** AVERAGE COUNTY ELECTRICITY COST = 14.7626



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************** N A T U R A L    G A S *************
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***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = O
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
***** AVERAGE COUNTY NATURAL GAS BILL = .
***** AVERAGE COUNTY NATURAL GAS PRICE = .
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OKLAHOMA   LL

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*******************************************************
************** E L E C T R I C I T Y *************
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************** 1  OKLAHOMA.GAS&ELECTRI   ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00457
MONTH = 2   AND FUEL ADJUSTMENT = 0.00437
MONTH = 3   AND FUEL ADJUSTMENT = 0.00477
MONTH = 4   AND FUEL ADJUSTMENT = 0.00512
MONTH = 5   AND FUEL ADJUSTMENT = 0.0051
MONTH = 6   AND FUEL ADJUSTMENT = 0.00527
MONTH = 7   AND FUEL ADJUSTMENT = 0.00528
MONTH = 8   AND FUEL ADJUSTMENT = 0.00499
MONTH = 9   AND FUEL ADJUSTMENT = 0.0053
MONTH = 10  AND FUEL ADJUSTMENT = 0.00578
MONTH = 11  AND FUEL ADJUSTMENT = 0.00576
MONTH = 12  AND FUEL ADJUSTMENT = 0.00671
        AVERAGE FUEL ADJUSTMENT = 5.257699
        ****************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 184
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WINTER DAYS IN RATE PERIOD 1  = 181
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE     = 27.44
BASE CUSTOMER CHARGE     = 3.2
BASE RATE PERIOD BILL    = 30.64
SUMMER CAPACITY CHARGE   = 32.8
SUMMER CUSTOMER CHARGE   = 3.2
SUMMER RATE PERIOD BILL= 36
AVERAGE BILL FOR RATE PERIOD = 33.34203
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 33.34203
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 5.257699
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0.
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 38.59973


*************** 2   RED.RIVER.ELEC.COOP   ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.02279
MONTH = 2   AND FUEL ADJUSTMENT = 0.00196
MONTH = 3   AND FUEL ADJUSTMENT = 0.00001
MONTH = 4   AND FUEL ADJUSTMENT = 0.00098
MONTH = 5   AND FUEL ADJUSTMENT = 0.00066
MONTH = 6   AND FUEL ADJUSTMENT = 0.00488
MONTH = 7   AND FUEL ADJUSTMENT = 0.00488
MONTH = 8   AND FUEL ADJUSTMENT = 0.00488
MONTH = 9   AND FUEL ADJUSTMENT = 0.00559
MONTH = 10  AND FUEL ADJUSTMENT = 0.00546
MONTH = 11  AND FUEL ADJUSTMENT = 0.00863
MONTH = 12  AND FUEL ADJUSTMENT = 0.01266
        AVERAGE FUEL ADJUSTMENT = 6.161151
        ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 1
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 10
 TTL # DAYS IN RATE PERIOD 1  = 10
BASE CAPACITY CHARGE     = 19.3
BASE CUSTOMER CHARGE     = 0
BASE RATE PERIOD BILL    = 19.3
SUMMER CAPACITY CHARGE   = 0
SUMMER CUSTOMER CHARGE = 0
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 19.3
        *******************************
MONTH RATE PERIOD 2  BEGAN = 1
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 122
WINTER DAYS IN RATE PERIOD 2  = 202
 TTL # DAYS IN RATE PERIOD 2  = 324
BASE CAPACITY CHARGE     = 29
BASE CUSTOMER CHARGE     = 6.5
BASE RATE PERIOD BILL    = 35.5
SUMMER CAPACITY CHARGE   = 34
SUMMER CUSTOMER CHARGE = 6.5
SUMMER RATE PERIOD BILL= 40.5
AVERAGE BILL FOR RATE PERIOD = 37.38272
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 33.71233
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 6.161151
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 39.87348
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***** SUMMARY OF COUNTY 1  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** OKLAHOMA.GAS&ELECTRI   AVERAGE BILL = 38.59973
***** RED.RIVER.ELEC.COOP   AVERAGE BILL = 39.87348
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
***** AVERAGE COUNTY ELECTRIC BILL = 39.24
***** AVERAGE COUNTY ELECTRICITY COST = 11.50059


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*************** N A T U R A L   G A S ***************
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*************** 1  LONESTAR.GAS.COMPANY  ***************
MONTH = 1   AND GAS ADJUSTMENT = 0.55
MONTH = 2   AND GAS ADJUSTMENT = 0.7107
MONTH = 3   AND GAS ADJUSTMENT = 0.66
MONTH = 4   AND GAS ADJUSTMENT = 0.66
MONTH = 5   AND GAS ADJUSTMENT = 0.75
MONTH = 6   AND GAS ADJUSTMENT = 0.74
MONTH = 7   AND GAS ADJUSTMENT = 1.14
MONTH = 8   AND GAS ADJUSTMENT = 0.71
MONTH = 9   AND GAS ADJUSTMENT = 0.63
MONTH = 10  AND GAS ADJUSTMENT = 0.94
MONTH = 11  AND GAS ADJUSTMENT = 0.73
MONTH = 12  AND GAS ADJUSTMENT = 0.79
        AVERAGE GAS ADJUSTMENT = 75.18893
        **********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 1
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 31
 TTL # DAYS IN RATE PERIOD 1  = 31
BASE CAPACITY CHARGE    = 128.7
BASE CUSTOMER CHARGE    = 2
BASE RATE PERIOD BILL   = 130.7
SUMMER CAPACITY CHARGE  = 103.95
SUMMER CUSTOMER CHARGE = 2
SUMMER RATE PERIOD BILL= 105.95
AVERAGE BILL FOR RATE PERIOD = 130.7
        **********************************
MONTH RATE PERIOD 2  BEGAN = 2
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 184
WINTER DAYS IN RATE PERIOD 2  = 150
 TTL # DAYS IN RATE PERIOD 2  = 334
BASE CAPACITY CHARGE    = 128.7
BASE CUSTOMER CHARGE    = 3.29
BASE RATE PERIOD BILL   = 131.99
SUMMER CAPACITY CHARGE = O
SUMMER CUSTOMER CHARGE = 3.29
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 131.99
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY = 131.8804
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 75.18893
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 207.0694
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***** SUMMARY OF COUNTY 1 *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** LONESTAR.GAS.COMPANY   AVERAGE BILL = 207.0694
*****     AVERAGE BILL = O
*****     AVERAGE BILL = O
***** AVERAGE COUNTY NATURAL GAS BILL = 207.07
***** AVERAGE COUNTY NATURAL GAS PRICE = 2.016261
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**************** E L E C T R I C I T Y *************
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*************** 1  CADDO.ELECTRIC.COOP.  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00462
MONTH = 2   AND FUEL ADJUSTMENT = 0.0031
MONTH = 3   AND FUEL ADJUSTMENT = 0.00157
MONTH = 4   AND FUEL ADJUSTMENT = 0.00182
MONTH = 5   AND FUEL ADJUSTMENT = 0.00265
MONTH = 6   AND FUEL ADJUSTMENT = 0.00655
MONTH = 7   AND FUEL ADJUSTMENT = 0.006
MONTH = 8   AND FUEL ADJUSTMENT = 0.00558
MONTH = 9   AND FUEL ADJUSTMENT = 0.00576
MONTH = 10  AND FUEL ADJUSTMENT = 0.01128
MONTH = 11  AND FUEL ADJUSTMENT = 0.01471
MONTH = 12  AND FUEL ADJUSTMENT = 0.01219
        AVERAGE FUEL ADJUSTMENT = 6.335863
            ****************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 153
WINTER DAYS IN RATE PERIOD 1  = 212
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE   = 36.25
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 41.25
SUMMER CAPACITY CHARGE = 36.25
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 41.25
AVERAGE BILL FOR RATE PERIOD = 41.25
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 41.25
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 6.335863
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 47.58586
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*************** 2  PUBLIC.SERV.CO.OKLA.  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00648
MONTH = 2   AND FUEL ADJUSTMENT = 0.00799
MONTH = 3   AND FUEL ADJUSTMENT = 0.00725
MONTH = 4   AND FUEL ADJUSTMENT = 0.00743
MONTH = 5   AND FUEL ADJUSTMENT = 0.00705
MONTH = 6   AND FUEL ADJUSTMENT = 0.0071
MONTH = 7   AND FUEL ADJUSTMENT = 0.00665
MONTH = 8   AND FUEL ADJUSTMENT = 0.00721
MONTH = 9   AND FUEL ADJUSTMENT = 0.00805
MONTH = 10  AND FUEL ADJUSTMENT = 0.00833
MONTH = 11  AND FUEL ADJUSTMENT = 0.00807
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MONTH = 12  AND FUEL ADJUSTMENT = 0.00891
     AVERAGE FUEL ADJUSTMENT = 7.538356
     *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 122
WINTER DAYS IN RATE PERIOD 1  = 243
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 32.43
BASE CUSTOMER CHARGE    = 0
BASE RATE PERIOD BILL   = 32.43
SUMMER CAPACITY CHARGE = 37.67
SUMMER CUSTOMER CHARGE = 0
SUMMER RATE PERIOD BILL= 37.67
AVERAGE BILL FOR RATE PERIOD = 34.18145
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 34.18145
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 7.538356
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 41.71981

***** SUMMARY OF COUNTY 2  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** CADDO.ELECTRIC.COOP.  AVERAGE BILL = 47.58586
***** PUBLIC.SERV.CO.OKLA.  AVERAGE BILL = 41.71981
*****     AVERAGE BILL = 0
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 44.65
***** AVERAGE COUNTY ELECTRICITY COST = 13.08617


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*************** N A T U R A L   G A S **************
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*************** 1  OKLAHOMA.NAT.GAS.CO.  ***************
MONTH = 1   AND GAS ADJUSTMENT = +0.519
MONTH = 2   AND GAS ADJUSTMENT = +0.05
MONTH = 3   AND GAS ADJUSTMENT = +0.098
MONTH = 4   AND GAS ADJUSTMENT = -0.08
MONTH = 5   AND GAS ADJUSTMENT = -0.142
MONTH = 6   AND GAS ADJUSTMENT = -0.26
MONTH = 7   AND GAS ADJUSTMENT = -0.276
MONTH = 8   AND GAS ADJUSTMENT = +0.283
MONTH = 9   AND GAS ADJUSTMENT = +0.393
MONTH = 10  AND GAS ADJUSTMENT = -0.36
MONTH = 11  AND GAS ADJUSTMENT = -0.443
MONTH = 12  AND GAS ADJUSTMENT = -0.463
     AVERAGE GAS ADJUSTMENT = +28.2332
     *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 2
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 38
 TTL # DAYS IN RATE PERIOD 1  = 38
BASE CAPACITY CHARGE    = 180.08
BASE CUSTOMER CHARGE    = 2.81
BASE RATE PERIOD BILL   = 182.89
SUMMER CAPACITY CHARGE = 172.54
SUMMER CUSTOMER CHARGE = 2.81
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SUMMER RATE PERIOD BILL= 175.35
AVERAGE BILL FOR RATE PERIOD = 182.89
        ********************************
MONTH RATE PERIOD 2  BEGAN = 2
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2   = 184
WINTER DAYS IN RATE PERIOD 2   = 143
 TTL # DAYS IN RATE PERIOD 2   = 327
BASE CAPACITY CHARGE     = 232.82
BASE CUSTOMER CHARGE     = 3.33
BASE RATE PERIOD BILL    = 236.15
SUMMER CAPACITY CHARGE = 225.84
SUMMER CUSTOMER CHARGE = 3.33
SUMMER RATE PERIOD BILL= 229.17
AVERAGE BILL FOR RATE PERIOD = 232.2224
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 227.0864
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = -28.2332
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 198.8533

*************** 2  ARKLA.GAS.COMPANY  ****************
MONTH = 1   AND GAS ADJUSTMENT = 0.587
MONTH = 2   AND GAS ADJUSTMENT = 0.618
MONTH = 3   AND GAS ADJUSTMENT = 0.644
MONTH = 4   AND GAS ADJUSTMENT = 0.722
MONTH = 5   AND GAS ADJUSTMENT = 0.65
MONTH = 6   AND GAS ADJUSTMENT = 0.595
MONTH = 7   AND GAS ADJUSTMENT = 0.673
MONTH = 8   AND GAS ADJUSTMENT = 0.676
MONTH = 9   AND GAS ADJUSTMENT = 0.726
MONTH = 10  AND GAS ADJUSTMENT = 0.735
MONTH = 11  AND GAS ADJUSTMENT = 0.704
MONTH = 12  AND GAS ADJUSTMENT = 0.763
        AVERAGE GAS ADJUSTMENT = 67.47452
        **********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1   = 0
WINTER DAYS IN RATE PERIOD 1   = 365
 TTL # DAYS IN RATE PERIOD 1   = 365
BASE CAPACITY CHARGE     = 151.99
BASE CUSTOMER CHARGE     = 2.87
BASE RATE PERIOD BILL    = 154.86
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.87
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 154.86
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 154.86
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = 67.47452
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 222.3345

***** SUMMARY OF COUNTY 2  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 2
***** OKLAHOMA.NAT.GAS.CO.  AVERAGE BILL = 198.8533
***** ARKLA.GAS.COMPANY  AVERAGE BILL = 222.3345
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 210.59
***** AVERAGE COUNTY NATURAL GAS PRICE = 2.050536
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OKLAHOMA HL

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************** E L E C T R I C I T Y *************
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************** 1  PUBLIC.SERV.CO.OKLA.  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00648
MONTH = 2   AND FUEL ADJUSTMENT = 0.00799
MONTH = 3   AND FUEL ADJUSTMENT = 0.00725
MONTH = 4   AND FUEL ADJUSTMENT = 0.00743
MONTH = 5   AND FUEL ADJUSTMENT = 0.00705
MONTH = 6   AND FUEL ADJUSTMENT = 0.0071
MONTH = 7   AND FUEL ADJUSTMENT = 0.00665
MONTH = 8   AND FUEL ADJUSTMENT = 0.00721
MONTH = 9   AND FUEL ADJUSTMENT = 0.00805
MONTH = 10  AND FUEL ADJUSTMENT = 0.00833
MONTH = 11  AND FUEL ADJUSTMENT = 0.00807
MONTH = 12  AND FUEL ADJUSTMENT = 0.00891
       AVERAGE FUEL ADJUSTMENT = 7.538356
       *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 122
WINTER DAYS IN RATE PERIOD 1  = 243
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 32.43
BASE CUSTOMER CHARGE    = 0
BASE RATE PERIOD BILL   = 32.43
SUMMER CAPACITY CHARGE = 37.67
SUMMER CUSTOMER CHARGE = 0
SUMMER RATE PERIOD BILL= 37.67
AVERAGE BILL FOR RATE PERIOD = 34.18145
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 34.18145
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 7.538356
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 41.71981


************** 2  EMPIRE.DISTRICT.ELEC  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00111
MONTH = 2   AND FUEL ADJUSTMENT = 0.00182
MONTH = 3   AND FUEL ADJUSTMENT = 0.00244
MONTH = 4   AND FUEL ADJUSTMENT = 0.00283
MONTH = 5   AND FUEL ADJUSTMENT = 0.00275
MONTH = 6   AND FUEL ADJUSTMENT = 0.00497
MONTH = 7   AND FUEL ADJUSTMENT = 0.00423
MONTH = 8   AND FUEL ADJUSTMENT = 0.00405
MONTH = 9   AND FUEL ADJUSTMENT = 0.00502
MONTH = 10  AND FUEL ADJUSTMENT = 0.00448
MONTH = 11  AND FUEL ADJUSTMENT = 0.00409
MONTH = 12  AND FUEL ADJUSTMENT = 0.00335
       AVERAGE FUEL ADJUSTMENT = 3.432795
       *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 122
WINTER DAYS IN RATE PERIOD 1  = 243
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 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE      = 30.522
BASE CUSTOMER CHARGE      = 4.95
BASE RATE PERIOD BILL     = 35.472
SUMMER CAPACITY CHARGE = 34.842
SUMMER CUSTOMER CHARGE = 4.95
SUMMER RATE PERIOD BILL= 39.792
AVERAGE BILL FOR RATE PERIOD = 36.91595
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 36.91595
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 3.432795
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY  = 40.34874


***** SUMMARY OF COUNTY 3  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** PUBLIC.SERV.CO.OKLA.   AVERAGE BILL = 41.71981
***** EMPIRE.DISTRICT.ELEC   AVERAGE BILL = 40.34874
*****     AVERAGE BILL = 0
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 41.03
***** AVERAGE COUNTY ELECTRICITY COST = 12.02521


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************** N A T U R A L    G A S *************
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*************** 1  THE.GAS.SERVICE.COMP  ****************
MONTH = 1   AND GAS ADJUSTMENT = 0.3092
MONTH = 2   AND GAS ADJUSTMENT = 0.5638
MONTH = 3   AND GAS ADJUSTMENT = 0.6092
MONTH = 4   AND GAS ADJUSTMENT = 0.6168
MONTH = 5   AND GAS ADJUSTMENT = 0.4276
MONTH = 6   AND GAS ADJUSTMENT = 0.7945
MONTH = 7   AND GAS ADJUSTMENT = 0.7973
MONTH = 8   AND GAS ADJUSTMENT = 0.7965
MONTH = 9   AND GAS ADJUSTMENT = 0.1816
MONTH = 10  AND GAS ADJUSTMENT = 0.1913
MONTH = 11  AND GAS ADJUSTMENT = 0.1431
MONTH = 12  AND GAS ADJUSTMENT = 0.4314
        AVERAGE GAS ADJUSTMENT = 48.85038
        ***********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 8
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 243
 TTL # DAYS IN RATE PERIOD 1  = 243
BASE CAPACITY CHARGE      = 145.47
BASE CUSTOMER CHARGE      = 2.89
BASE RATE PERIOD BILL     = 148.36
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.89
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 148.36
        ***********************************
MONTH RATE PERIOD 2  BEGAN = 9
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 122
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TTL # DAYS IN RATE PERIOD 2  = 122
BASE CAPACITY CHARGE    = 219.78
BASE CUSTOMER CHARGE    = 2.17
BASE RATE PERIOD BILL   = 221.95
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.17
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 221.95
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 172.9572
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 48.85038
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 221.8076


***** SUMMARY OF COUNTY 3  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** THE.GAS.SERVICE.COMP   AVERAGE BILL = 221.8076
*****      AVERAGE BILL = 0
*****      AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 221.81
***** AVERAGE COUNTY NATURAL GAS PRICE = 2.159786
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**************** E L E C T R I C I T Y ****************
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*************** 1  INDIAN.ELECTRIC.COOP  ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.0142
MONTH = 2   AND FUEL ADJUSTMENT = 0.01455
MONTH = 3   AND FUEL ADJUSTMENT = 0.0011
MONTH = 4   AND FUEL ADJUSTMENT = 0.00363
MONTH = 5   AND FUEL ADJUSTMENT = 0.00581
MONTH = 6   AND FUEL ADJUSTMENT = 0.00924
MONTH = 7   AND FUEL ADJUSTMENT = 0.00468
MONTH = 8   AND FUEL ADJUSTMENT = 0.0041
MONTH = 9   AND FUEL ADJUSTMENT = 0.00377
MONTH = 10  AND FUEL ADJUSTMENT = 0.00507
MONTH = 11  AND FUEL ADJUSTMENT = 0.01071
MONTH = 12  AND FUEL ADJUSTMENT = 0.00835
        AVERAGE FUEL ADJUSTMENT = 7.042493
        ***********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 2
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 59
 TTL # DAYS IN RATE PERIOD 1  = 59
BASE CAPACITY CHARGE    = 21.55
BASE CUSTOMER CHARGE    = 0
BASE RATE PERIOD BILL   = 21.55
SUMMER CAPACITY CHARGE = 24.3
SUMMER CUSTOMER CHARGE = 0
SUMMER RATE PERIOD BILL= 24.3
AVERAGE BILL FOR RATE PERIOD = 21.55
        ***********************************
MONTH RATE PERIOD 2  BEGAN = 3
MONTH RATE PERIOD 2  ENDED = 10
SUMMER DAYS IN RATE PERIOD 2  = 153
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WINTER DAYS IN RATE PERIOD 2  = 92
 TTL # DAYS IN RATE PERIOD 2  = 245
BASE CAPACITY CHARGE    = 33.25
BASE CUSTOMER CHARGE    = 5.45
BASE RATE PERIOD BILL   = 38.7
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5.45
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 38.7
         ********************************
MONTH RATE PERIOD 3  BEGAN = 11
MONTH RATE PERIOD 3  ENDED = 12
SUMMER DAYS IN RATE PERIOD 3  = 0
WINTER DAYS IN RATE PERIOD 3  = 61
 TTL # DAYS IN RATE PERIOD 3  = 61
BASE CAPACITY CHARGE    = 34.105
BASE CUSTOMER CHARGE    = 5.5
BASE RATE PERIOD BILL   = 39.605
SUMMER CAPACITY CHARGE = 34.105
SUMMER CUSTOMER CHARGE = 5.5
SUMMER RATE PERIOD BILL= 39.605
AVERAGE BILL FOR RATE PERIOD = 39.605
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 36.07905
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 7.042493
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 43.12155

*************** 2  OKLAHOMA.GAS&ELECTRI  ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00457
MONTH = 2   AND FUEL ADJUSTMENT = 0.00437
MONTH = 3   AND FUEL ADJUSTMENT = 0.00477
MONTH = 4   AND FUEL ADJUSTMENT = 0.00512
MONTH = 5   AND FUEL ADJUSTMENT = 0.0051
MONTH = 6   AND FUEL ADJUSTMENT = 0.00527
MONTH = 7   AND FUEL ADJUSTMENT = 0.00528
MONTH = 8   AND FUEL ADJUSTMENT = 0.00499
MONTH = 9   AND FUEL ADJUSTMENT = 0.0053
MONTH = 10  AND FUEL ADJUSTMENT = 0.00578
MONTH = 11  AND FUEL ADJUSTMENT = 0.00576
MONTH = 12  AND FUEL ADJUSTMENT = 0.00671
        AVERAGE FUEL ADJUSTMENT = 5.257699
         ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 184
WINTER DAYS IN RATE PERIOD 1  = 181
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 27.44
BASE CUSTOMER CHARGE    = 3.2
BASE RATE PERIOD BILL   = 30.64
SUMMER CAPACITY CHARGE = 32.8
SUMMER CUSTOMER CHARGE = 3.2
SUMMER RATE PERIOD BILL= 36
AVERAGE BILL FOR RATE PERIOD = 33.34203
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 33.34203
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 5.257699
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 38.59973
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***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** INDIAN.ELECTRIC.COOP   AVERAGE BILL = 43.12155
***** OKLAHOMA.GAS&ELECTRI   AVERAGE BILL = 38.59973
*****       AVERAGE BILL = O
*****       AVERAGE BILL = O
***** AVERAGE COUNTY ELECTRIC BILL = 40.86
***** AVERAGE COUNTY ELECTRICITY COST = 11.97538


*********************************************************
**************** N A T U R A L   G A S **************
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**************** 1  AKER.OIL&GAS.COMPANY  ****************
MONTH = 1   AND GAS ADJUSTMENT = 0.78
MONTH = 2   AND GAS ADJUSTMENT = 1.03
MONTH = 3   AND GAS ADJUSTMENT = 1.11
MONTH = 4   AND GAS ADJUSTMENT = 1.11
MONTH = 5   AND GAS ADJUSTMENT = 0.93
MONTH = 6   AND GAS ADJUSTMENT = 1.3
MONTH = 7   AND GAS ADJUSTMENT = 0.2
MONTH = 8   AND GAS ADJUSTMENT = 0.2
MONTH = 9   AND GAS ADJUSTMENT = 0.2
MONTH = 10  AND GAS ADJUSTMENT = 0.26
MONTH = 11  AND GAS ADJUSTMENT = 0.37
MONTH = 12  AND GAS ADJUSTMENT = 0.51
        AVERAGE GAS ADJUSTMENT = 66.28219
        ******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 6
SUMMER DAYS IN RATE PERIOD 1  = O
WINTER DAYS IN RATE PERIOD 1  = 181
 TTL # DAYS IN RATE PERIOD 1  = 181
BASE CAPACITY CHARGE   = 120.96
BASE CUSTOMER CHARGE   = 2.16
BASE RATE PERIOD BILL  = 123.12
SUMMER CAPACITY CHARGE = O
SUMMER CUSTOMER CHARGE = 2.16
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 123.12
        ******************************
MONTH RATE PERIOD 2  BEGAN = 7
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = O
WINTER DAYS IN RATE PERIOD 2  = 184
 TTL # DAYS IN RATE PERIOD 2  = 184
BASE CAPACITY CHARGE   = 416.79
BASE CUSTOMER CHARGE   = 5.31
BASE RATE PERIOD BILL  = 422.1
SUMMER CAPACITY CHARGE = O
SUMMER CUSTOMER CHARGE = 5.31
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 422.1
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 273.8387
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 66.28219
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 340.1209
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*************** 2 OKLAHOMA.NAT.GAS.CO. ****************
MONTH = 1   AND GAS ADJUSTMENT = -0.519
MONTH = 2   AND GAS ADJUSTMENT = -0.05
MONTH = 3   AND GAS ADJUSTMENT = -0.098
MONTH = 4   AND GAS ADJUSTMENT = -0.08
MONTH = 5   AND GAS ADJUSTMENT = -0.142
MONTH = 6   AND GAS ADJUSTMENT = -0.26
MONTH = 7   AND GAS ADJUSTMENT = -0.276
MONTH = 8   AND GAS ADJUSTMENT = -0.283
MONTH = 9   AND GAS ADJUSTMENT = -0.393
MONTH = 10 AND GAS ADJUSTMENT = -0.36
MONTH = 11 AND GAS ADJUSTMENT = -0.443
MONTH = 12 AND GAS ADJUSTMENT = -0.463 ·
          AVERAGE GAS ADJUSTMENT = -28.2332
          ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 2
SUMMER DAYS IN RATE PERIOD 1   = 0
WINTER DAYS IN RATE PERIOD 1   = 38
 TTL # DAYS IN RATE PERIOD 1   = 38
BASE CAPACITY CHARGE   = 180.08
BASE CUSTOMER CHARGE   = 2.81
BASE RATE PERIOD BILL = 182.89
SUMMER CAPACITY CHARGE = 172.54
SUMMER CUSTOMER CHARGE = 2.81
SUMMER RATE PERIOD BILL= 175.35
AVERAGE BILL FOR RATE PERIOD = 182.89
          ****
MONTH RATE PERIOD 2 BEGAN = 2
MONTH RATE PERIOD 2 ENDED = 12
SUMMER DAYS IN RATE PERIOD 2   = 184
WINTER DAYS IN RATE PERIOD 2   = 143
 TTL # DAYS IN RATE PERIOD 2   = 327
BASE CAPACITY CHARGE   = 232.82
BASE CUSTOMER CHARGE   = 3.33
BASE RATE PERIOD BILL = 236.15
SUMMER CAPACITY CHARGE = 225.84
SUMMER CUSTOMER CHARGE = 3.33
SUMMER RATE PERIOD BILL= 229.17
AVERAGE BILL FOR RATE PERIOD = 232.2224
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY = 227.0864
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = -28.2332
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 198.8533

*************** 3 ARKLA.GAS.COMPANY ***************
MONTH = 1   AND GAS ADJUSTMENT = 0.587
MONTH = 2   AND GAS ADJUSTMENT = 0.618
MONTH = 3   AND GAS ADJUSTMENT = 0.644
MONTH = 4   AND GAS ADJUSTMENT = 0.722
MONTH = 5   AND GAS ADJUSTMENT = 0.65
MONTH = 6   AND GAS ADJUSTMENT = 0.595
MONTH = 7   AND GAS ADJUSTMENT = 0.673
MONTH = 8   AND GAS ADJUSTMENT = 0.676
MONTH = 9   AND GAS ADJUSTMENT = 0.726
MONTH = 10 AND GAS ADJUSTMENT = 0.735
MONTH = 11 AND GAS ADJUSTMENT = 0.704
MONTH = 12 AND GAS ADJUSTMENT = 0.763
          AVERAGE GAS ADJUSTMENT = 67.47452

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MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 151.99
BASE CUSTOMER CHARGE    = 2.87
BASE RATE PERIOD BILL   = 154.86
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.87
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 154.86
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 154.86
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = 67.47452
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 222.3345


***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 3
***** AKER.OIL&GAS.COMPANY  AVERAGE BILL = 340.1209
***** OKLAHOMA.NAT.GAS.CO.  AVERAGE BILL = 198.8533
***** ARKLA.GAS.COMPANY  AVERAGE BILL = 222.3345
***** AVERAGE COUNTY NATURAL GAS BILL = 253.77
***** AVERAGE COUNTY NATURAL GAS PRICE = 2.470983
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VIRGINIA LL

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**************** E L E C T R I C I T Y ******************
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*************** 1  RAPPAHANNOCK.EL.COOP  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.01093
MONTH = 2   AND FUEL ADJUSTMENT = 0.01256
MONTH = 3   AND FUEL ADJUSTMENT = 0.01425
MONTH = 4   AND FUEL ADJUSTMENT = 0.01482
MONTH = 5   AND FUEL ADJUSTMENT = 0.01398
MONTH = 6   AND FUEL ADJUSTMENT = 0.01114
MONTH = 7   AND FUEL ADJUSTMENT = 0.00752
MONTH = 8   AND FUEL ADJUSTMENT = 0.00607
MONTH = 9   AND FUEL ADJUSTMENT = 0.00519
MONTH = 10  AND FUEL ADJUSTMENT = 0.00868
MONTH = 11  AND FUEL ADJUSTMENT = 0.01161
MONTH = 12  AND FUEL ADJUSTMENT = 0.01355
        AVERAGE FUEL ADJUSTMENT = 10.76126
        *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE   = 45.9
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 50.9
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
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AVERAGE BILL FOR RATE PERIOD = 50.9
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 50.9
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 10.76126
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 4.05
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 65.71126

*************** 2 VIRGINIA.EL&POWER.CO ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.015
MONTH = 2   AND FUEL ADJUSTMENT = 0.015
MONTH = 3   AND FUEL ADJUSTMENT = 0.015
MONTH = 4   AND FUEL ADJUSTMENT = 0.015
MONTH = 5   AND FUEL ADJUSTMENT = 0.015
MONTH = 6   AND FUEL ADJUSTMENT = 0.015
MONTH = 7   AND FUEL ADJUSTMENT = 0.0097
MONTH = 8   AND FUEL ADJUSTMENT = 0.0097
MONTH = 9   AND FUEL ADJUSTMENT = 0.0097
MONTH = 10 AND FUEL ADJUSTMENT = 0.0097
MONTH = 11 AND FUEL ADJUSTMENT = 0.0097
MONTH = 12 AND FUEL ADJUSTMENT = 0.0097
        AVERAGE FUEL ADJUSTMENT = 12.32822
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 3
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 90
 TTL # DAYS IN RATE PERIOD 1 = 90
BASE CAPACITY CHARGE   = 58.82
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL = 63.82
SUMMER CAPACITY CHARGE = 62
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 67
AVERAGE BILL FOR RATE PERIOD = 63.82
        ****
MONTH RATE PERIOD 2 BEGAN = 4
MONTH RATE PERIOD 2 ENDED = 5
SUMMER DAYS IN RATE PERIOD 2 = 0
WINTER DAYS IN RATE PERIOD 2 = 61
 TTL # DAYS IN RATE PERIOD 2 = 61
BASE CAPACITY CHARGE   = 59.62
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL = 64.62
SUMMER CAPACITY CHARGE = 62.8
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 67.8
AVERAGE BILL FOR RATE PERIOD = 64.62
        ****
MONTH RATE PERIOD 3 BEGAN = 6
MONTH RATE PERIOD 3 ENDED = 9
SUMMER DAYS IN RATE PERIOD 3 = 122
WINTER DAYS IN RATE PERIOD 3 = 0
 TTL # DAYS IN RATE PERIOD 3 = 122
BASE CAPACITY CHARGE   = 54.32
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL = 59.32
SUMMER CAPACITY CHARGE = 57.5
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 62.5
AVERAGE BILL FOR RATE PERIOD = 62.5

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                '*************************************
MONTH RATE PERIOD 4  BEGAN = 10
MONTH RATE PERIOD 4  ENDED = 12
SUMMER DAYS IN RATE PERIOD 4  = 0
WINTER DAYS IN RATE PERIOD 4  = 74
 TTL # DAYS IN RATE PERIOD 4  = 74
BASE CAPACITY CHARGE   = 56.92
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 61.92
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 61.92
                ***************************************
MONTH RATE PERIOD 5  BEGAN = 12
MONTH RATE PERIOD 5  ENDED = 12
SUMMER DAYS IN RATE PERIOD 5  = 0
WINTER DAYS IN RATE PERIOD 5  = 18
 TTL # DAYS IN RATE PERIOD 5  = 18
BASE CAPACITY CHARGE   = 54.32
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 59.32
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 59.32
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 62.90537
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 12.32822
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 75.23359

***** SUMMARY OF COUNTY 1  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** RAPPAHANNOCK.EL.COOP   AVERAGE BILL = 65.71126
***** VIRGINIA.EL&POWER.CO   AVERAGE BILL = 75.23359
*****     AVERAGE BILL = 0
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 70.47
***** AVERAGE COUNTY ELECTRICITY COST = 20.65358


****************************************************************
************** N A T U R A L   G A S **************
****************************************************************

************** 1  COLUMBIA.NATURAL.GAS  ***************
MONTH = 1   AND GAS ADJUSTMENT = 0
MONTH = 2   AND GAS ADJUSTMENT = 0
MONTH = 3   AND GAS ADJUSTMENT = 0.055
MONTH = 4   AND GAS ADJUSTMENT = 0.018
MONTH = 5   AND GAS ADJUSTMENT = 0.087
MONTH = 6   AND GAS ADJUSTMENT = 0.104
MONTH = 7   AND GAS ADJUSTMENT = 0.107
MONTH = 8   AND GAS ADJUSTMENT = 0.05
MONTH = 9   AND GAS ADJUSTMENT = 0.034
MONTH = 10   AND GAS ADJUSTMENT = 0.85
MONTH = 11   AND GAS ADJUSTMENT = 0
MONTH = 12   AND GAS ADJUSTMENT = 0.859
        AVERAGE GAS ADJUSTMENT = 18.33644
```

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            ****************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 2
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 59
 TTL # DAYS IN RATE PERIOD 1  = 59
BASE CAPACITY CHARGE    = 353.97
BASE CUSTOMER CHARGE    = 4.5
BASE RATE PERIOD BILL   = 358.47
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 358.47
            ********************************
MONTH RATE PERIOD 2  BEGAN = 3
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 306
 TTL # DAYS IN RATE PERIOD 2  = 306
BASE CAPACITY CHARGE    = 350.05
BASE CUSTOMER CHARGE    = 4.5
BASE RATE PERIOD BILL   = 354.55
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 354.55
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 355.1836
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE    = 18.33644
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0.405
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 373.9251

***** SUMMARY OF COUNTY 1  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** COLUMBIA.NATURAL.GAS   AVERAGE BILL = 373.9251
*****     AVERAGE BILL = 0
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 373.93
***** AVERAGE COUNTY NATURAL GAS PRICE = 3.640993

*******************************************************
*************** O I L   C O M P A N Y **************
*******************************************************

********************** MADISON.OIL.COMPANY  **********************
            ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 1
 TTL # DAYS IN RATE PERIOD 1  = 31
 AVERAGE BILL FOR RATE PERIOD = 126.75
            ********************************
MONTH RATE PERIOD 2  BEGAN = 2
MONTH RATE PERIOD 2  ENDED = 2
 TTL # DAYS IN RATE PERIOD 2  = 28
 AVERAGE BILL FOR RATE PERIOD = 134.25
            ********************************
MONTH RATE PERIOD 3  BEGAN = 3
MONTH RATE PERIOD 3  ENDED = 7
 TTL # DAYS IN RATE PERIOD 3  = 153
 AVERAGE BILL FOR RATE PERIOD = 142.2
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*******************************
MONTH RATE PERIOD 4  BEGAN = 8
MONTH RATE PERIOD 4  ENDED = 8
 TTL # DAYS IN RATE PERIOD 4  = 31
 AVERAGE BILL FOR RATE PERIOD = 142.2
       *******************************
MONTH RATE PERIOD 5  BEGAN = 9
MONTH RATE PERIOD 5  ENDED = 11
 TTL # DAYS IN RATE PERIOD 5  = 92
 AVERAGE BILL FOR RATE PERIOD = 142.2
       *******************************
MONTH RATE PERIOD 6  BEGAN = 12
MONTH RATE PERIOD 6  ENDED = 12
 TTL # DAYS IN RATE PERIOD 6  = 31
 AVERAGE BILL FOR RATE PERIOD = 147
AVERAGE MONTHLY UTILITY BILL FOR COMPANY/COUNTY = 51492.45
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VIRGINIA LH

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*********************************************
**************** E L E C T R I C I T Y **************
*********************************************

************** 1  COMMUNITY.ELEC.COOP  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.00912
MONTH = 2   AND FUEL ADJUSTMENT = 0.01008
MONTH = 3   AND FUEL ADJUSTMENT = 0.01176
MONTH = 4   AND FUEL ADJUSTMENT = 0.01492
MONTH = 5   AND FUEL ADJUSTMENT = 0.014
MONTH = 6   AND FUEL ADJUSTMENT = 0.01166
MONTH = 7   AND FUEL ADJUSTMENT = 0.00785
MONTH = 8   AND FUEL ADJUSTMENT = 0.005
MONTH = 9   AND FUEL ADJUSTMENT = 0.00407
MONTH = 10  AND FUEL ADJUSTMENT = 0.00867
MONTH = 11  AND FUEL ADJUSTMENT = 0.01063
MONTH = 12  AND FUEL ADJUSTMENT = 0.01115
       AVERAGE FUEL ADJUSTMENT = 9.919699
       *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 6
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 181
 TTL # DAYS IN RATE PERIOD 1  = 181
BASE CAPACITY CHARGE   = 38.7
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 43.7
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 43.7
       *******************************
MONTH RATE PERIOD 2  BEGAN = 7
MONTH RATE PERIOD 2  ENDED = 10
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 123
 TTL # DAYS IN RATE PERIOD 2  = 123
BASE CAPACITY CHARGE   = 39.7
BASE CUSTOMER CHARGE   = 5
```

```
BASE RATE PERIOD BILL   = 44.7
SUMMER CAPACITY CHARGE  = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD  = 44.7
         ****************************
MONTH RATE PERIOD 3  BEGAN = 11
MONTH RATE PERIOD 3  ENDED = 12
SUMMER DAYS IN RATE PERIOD 3  = 0
WINTER DAYS IN RATE PERIOD 3  = 61
 TTL # DAYS IN RATE PERIOD 3  = 61
BASE CAPACITY CHARGE    = 38.7
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 43.7
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 43.7
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 44.03699
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE     = 9.919699
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 4.02
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 57.97668

*************** 2  MECKLENBURG.ELECCOOP  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.01011
MONTH = 2   AND FUEL ADJUSTMENT = 0.01167
MONTH = 3   AND FUEL ADJUSTMENT = 0.01342
MONTH = 4   AND FUEL ADJUSTMENT = 0.01368
MONTH = 5   AND FUEL ADJUSTMENT = 0.01192
MONTH = 6   AND FUEL ADJUSTMENT = 0.00861
MONTH = 7   AND FUEL ADJUSTMENT = 0.0055
MONTH = 8   AND FUEL ADJUSTMENT = 0.00403
MONTH = 9   AND FUEL ADJUSTMENT = 0.00848
MONTH = 10  AND FUEL ADJUSTMENT = 0.01103
MONTH = 11  AND FUEL ADJUSTMENT = 0.01207
MONTH = 12  AND FUEL ADJUSTMENT = 0.01088
       AVERAGE FUEL ADJUSTMENT = 10.0974
         ****************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 36.375
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 41.375
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 41.375
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 41.375
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE     = 10.0974
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 3.88
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 55.3524

*************** 3  PRINCE GEORGE ELCOOP  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.01153
MONTH = 2   AND FUEL ADJUSTMENT = 0.0134
MONTH = 3   AND FUEL ADJUSTMENT = 0.01533
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MONTH = 4   AND FUEL ADJUSTMENT = 0.01493
MONTH = 5   AND FUEL ADJUSTMENT = 0.01258
MONTH = 6   AND FUEL ADJUSTMENT = 0.00889
MONTH = 7   AND FUEL ADJUSTMENT = 0.00563
MONTH = 8   AND FUEL ADJUSTMENT = 0.00444
MONTH = 9   AND FUEL ADJUSTMENT = 0.00895
MONTH = 10  AND FUEL ADJUSTMENT = 0.01121
MONTH = 11  AND FUEL ADJUSTMENT = 0.01195
MONTH = 12  AND FUEL ADJUSTMENT = 0.01082
        AVERAGE FUEL ADJUSTMENT = 10.77956
        *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE   = 41.8
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 46.8
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 46.8
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 46.8
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 10.77956
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 57.57956

*************** 4  VIRGINIA.EL&POWER.CO  ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.015
MONTH = 2   AND FUEL ADJUSTMENT = 0.015
MONTH = 3   AND FUEL ADJUSTMENT = 0.015
MONTH = 4   AND FUEL ADJUSTMENT = 0.015
MONTH = 5   AND FUEL ADJUSTMENT = 0.015
MONTH = 6   AND FUEL ADJUSTMENT = 0.015
MONTH = 7   AND FUEL ADJUSTMENT = 0.0097
MONTH = 8   AND FUEL ADJUSTMENT = 0.0097
MONTH = 9   AND FUEL ADJUSTMENT = 0.0097
MONTH = 10  AND FUEL ADJUSTMENT = 0.0097
MONTH = 11  AND FUEL ADJUSTMENT = 0.0097
MONTH = 12  AND FUEL ADJUSTMENT = 0.0097
        AVERAGE FUEL ADJUSTMENT = 12.32822
        ********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 3
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 90
 TTL # DAYS IN RATE PERIOD 1  = 90
BASE CAPACITY CHARGE   = 58.82
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 63.82
SUMMER CAPACITY CHARGE = 62
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 67
AVERAGE BILL FOR RATE PERIOD = 63.82
        *********************************
MONTH RATE PERIOD 2  BEGAN = 4
MONTH RATE PERIOD 2  ENDED = 5
SUMMER DAYS IN RATE PERIOD 2  = 0
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WINTER DAYS IN RATE PERIOD 2  = 61
 TTL # DAYS IN RATE PERIOD 2  = 61
BASE CAPACITY CHARGE    = 59.62
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 64.62
SUMMER CAPACITY CHARGE  = 62.8
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = 67.8
AVERAGE BILL FOR RATE PERIOD = 64.62
         *********************************
MONTH RATE PERIOD 3  BEGAN = 6
MONTH RATE PERIOD 3  ENDED = 9
SUMMER DAYS IN RATE PERIOD 3  = 122
WINTER DAYS IN RATE PERIOD 3  = 0
 TTL # DAYS IN RATE PERIOD 3  = 122
BASE CAPACITY CHARGE    = 144.3
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 149.3
SUMMER CAPACITY CHARGE  = 57.5
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = 62.5
AVERAGE BILL FOR RATE PERIOD = 62.5
         *********************************
MONTH RATE PERIOD 4  BEGAN = 10
MONTH RATE PERIOD 4  ENDED = 12
SUMMER DAYS IN RATE PERIOD 4  = 0
WINTER DAYS IN RATE PERIOD 4  = 74
 TTL # DAYS IN RATE PERIOD 4  = 74
BASE CAPACITY CHARGE    = 56.92
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 61.92
SUMMER CAPACITY CHARGE  = 60.1
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = 65.1
AVERAGE BILL FOR RATE PERIOD = 61.92
         *********************************
MONTH RATE PERIOD 5  BEGAN = 12
MONTH RATE PERIOD 5  ENDED = 12
SUMMER DAYS IN RATE PERIOD 5  = 0
WINTER DAYS IN RATE PERIOD 5  = 18
 TTL # DAYS IN RATE PERIOD 5  = 18
BASE CAPACITY CHARGE    = 54.32
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 59.32
SUMMER CAPACITY CHARGE  = 57.5
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = 62.5
AVERAGE BILL FOR RATE PERIOD = 59.32
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 62.90537
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 12.32822
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY. = 75.23359

***** SUMMARY OF COUNTY 2  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 4
***** COMMUNITY.ELEC.COOP   AVERAGE BILL = 57.87668
***** MECKLENBURG.ELECCOOP  AVERAGE BILL = 55.3524
***** PRINCE GEORGE ELCOOP  AVERAGE BILL = 57.57956
***** VIRGINIA.EL&POWER.CO  AVERAGE BILL = 75.23359
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***** AVERAGE COUNTY ELECTRIC BILL = 61.54
***** AVERAGE COUNTY ELECTRICITY COST = 18.03634

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**************** N A T U R A L   G A S ****************
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*************** 1 COMMONWEALTH GAS SER *****************
MONTH = 1   AND GAS ADJUSTMENT = 0.752
MONTH = 2   AND GAS ADJUSTMENT = 0.72
MONTH = 3   AND GAS ADJUSTMENT = 0.944
MONTH = 4   AND GAS ADJUSTMENT = 0.921
MONTH = 5   AND GAS ADJUSTMENT = 0.933
MONTH = 6   AND GAS ADJUSTMENT = 0.959
MONTH = 7   AND GAS ADJUSTMENT = 0.872
MONTH = 8   AND GAS ADJUSTMENT = 0.79
MONTH = 9   AND GAS ADJUSTMENT = 1.063
MONTH = 10 AND GAS ADJUSTMENT = 0.831
MONTH = 11 AND GAS ADJUSTMENT = 0.655
MONTH = 12 AND GAS ADJUSTMENT = 0.889
        AVERAGE GAS ADJUSTMENT = 86.14822
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 2
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 59
 TTL # DAYS IN RATE PERIOD 1 = 59
BASE CAPACITY CHARGE   = 353.79
BASE CUSTOMER CHARGE   = 2.74
BASE RATE PERIOD BILL = 356.53
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.74
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 356.53
         ****
MONTH RATE PERIOD 2 BEGAN = 3
MONTH RATE PERIOD 2 ENDED = 12
SUMMER DAYS IN RATE PERIOD 2 = 0
WINTER DAYS IN RATE PERIOD 2 = 306
 TTL # DAYS IN RATE PERIOD 2 = 306
BASE CAPACITY CHARGE   = 368.76
BASE CUSTOMER CHARGE   = 2.74
BASE RATE PERIOD BILL = 371.5
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 2.74
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 371.5
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY = 369.0802
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 86.14822
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0.402
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 455.6304

***** SUMMARY OF COUNTY 2 *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** COMMONWEALTH GAS SER AVERAGE BILL = 455.6304
*****   AVERAGE BILL = 0
*****   AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 455.63

***** AVERAGE COUNTY NATURAL GAS PRICE = 4.436514

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**********************************************************
***************** O I L   C O M P A N Y *****************
**********************************************************

******************** G&S.OIL.COMPANY ********************
           *************************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
  TTL # DAYS IN RATE PERIOD 1  = 365
  AVERAGE BILL FOR RATE PERIOD = 153
AVERAGE MONTHLY UTILITY BILL FOR COMPANY/COUNTY = 55845
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VIRGINIA   HL

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**************** E L E C T R I C I T Y *****************
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*************** 1  POTOMAC.EDISON.CO.  ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.0058
MONTH = 2   AND FUEL ADJUSTMENT = 0.0058
MONTH = 3   AND FUEL ADJUSTMENT = 0.0058
MONTH = 4   AND FUEL ADJUSTMENT = 0.0058
MONTH = 5   AND FUEL ADJUSTMENT = 0.0058
MONTH = 6   AND FUEL ADJUSTMENT = 0.0058
MONTH = 7   AND FUEL ADJUSTMENT = 0.0058
MONTH = 8   AND FUEL ADJUSTMENT = 0.0058
MONTH = 9   AND FUEL ADJUSTMENT = 0.0058
MONTH = 10  AND FUEL ADJUSTMENT = 0.00438
MONTH = 11  AND FUEL ADJUSTMENT = 0.00438
MONTH = 12  AND FUEL ADJUSTMENT = 0.00438
        AVERAGE FUEL ADJUSTMENT = 5.442082
         *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 7
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 212
  TTL # DAYS IN RATE PERIOD 1  = 212
BASE CAPACITY CHARGE   = 40.695
BASE CUSTOMER CHARGE   = 3.28
BASE RATE PERIOD BILL  = 43.975
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 3.28
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 43.975
         ********************************
MONTH RATE PERIOD 2  BEGAN = 8
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 153
  TTL # DAYS IN RATE PERIOD 2  = 153
BASE CAPACITY CHARGE   = 45.505
BASE CUSTOMER CHARGE   = 3.67
BASE RATE PERIOD BILL  = 49.175
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 3.67
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SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 49.175
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY    = 46.15473
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE     = 5.442082
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS    = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 51.59681


*************** 2  RAPPAHANNOCK.EL.COOP   ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.01093
MONTH = 2   AND FUEL ADJUSTMENT = 0.01256
MONTH = 3   AND FUEL ADJUSTMENT = 0.01425
MONTH = 4   AND FUEL ADJUSTMENT = 0.01482
MONTH = 5   AND FUEL ADJUSTMENT = 0.01398
MONTH = 6   AND FUEL ADJUSTMENT = 0.01114
MONTH = 7   AND FUEL ADJUSTMENT = 0.00752
MONTH = 8   AND FUEL ADJUSTMENT = 0.00507
MONTH = 9   AND FUEL ADJUSTMENT = 0.00519
MONTH = 10   AND FUEL ADJUSTMENT = 0.00868
MONTH = 11   AND FUEL ADJUSTMENT = 0.01161
MONTH = 12   AND FUEL ADJUSTMENT = 0.01355
        AVERAGE FUEL ADJUSTMENT = 10.76126
        *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
SUMMER DAYS IN RATE PERIOD 1  = O
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 45.9
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 50.9
SUMMER CAPACITY CHARGE = O
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 50.9
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY    = 50.9
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE     = 10.76126
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS    = 4.05
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 65.71126


*************** 3  VIRGINIA.EL&POWER.CO   ***************
MONTH = 1   AND FUEL ADJUSTMENT = 0.015
MONTH = 2   AND FUEL ADJUSTMENT = 0.015
MONTH = 3   AND FUEL ADJUSTMENT = 0.015
MONTH = 4   AND FUEL ADJUSTMENT = 0.015
MONTH = 5   AND FUEL ADJUSTMENT = 0.015
MONTH = 6   AND FUEL ADJUSTMENT = 0.015
MONTH = 7   AND FUEL ADJUSTMENT = 0.0097
MONTH = 8   AND FUEL ADJUSTMENT = 0.0097
MONTH = 9   AND FUEL ADJUSTMENT = 0.0097
MONTH = 10   AND FUEL ADJUSTMENT = 0.0097
MONTH = 11   AND FUEL ADJUSTMENT = 0.0097
MONTH = 12   AND FUEL ADJUSTMENT = 0.0097
        AVERAGE FUEL ADJUSTMENT = 12.32822
        *******************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 3
SUMMER DAYS IN RATE PERIOD 1  = O
WINTER DAYS IN RATE PERIOD 1  = 90
 TTL # DAYS IN RATE PERIOD 1  = 90
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BASE CAPACITY CHARGE   = 58.82
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 63 82
SUMMER CAPACITY CHARGE = 62
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 67
AVERAGE BILL FOR RATE PERIOD = 63.82
        *********************************
MONTH RATE PERIOD 2  BEGAN = 4
MONTH RATE PERIOD 2  ENDED = 5
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 61
 TTL # DAYS IN RATE PERIOD 2  = 61
BASE CAPACITY CHARGE   = 59.62
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 64.62
SUMMER CAPACITY CHARGE = 62.8
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 67.8
AVERAGE BILL FOR RATE PERIOD = 64.62
        *********************************
MONTH RATE PERIOD 3  BEGAN = 6
MONTH RATE PERIOD 3  ENDED = 9
SUMMER DAYS IN RATE PERIOD 3  = 122
WINTER DAYS IN RATE PERIOD 3  = 0
 TTL # DAYS IN RATE PERIOD 3  = 122
BASE CAPACITY CHARGE   = 144.3
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 149.3
SUMMER CAPACITY CHARGE = 57.5
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 62.5
AVERAGE BILL FOR RATE PERIOD = 62.5
        *********************************
MONTH RATE PERIOD 4  BEGAN = 10
MONTH RATE PERIOD 4  ENDED = 12
SUMMER DAYS IN RATE PERIOD 4  = 0
WINTER DAYS IN RATE PERIOD 4  = 74
 TTL # DAYS IN RATE PERIOD 4  = 74
BASE CAPACITY CHARGE   = 56.92
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 61.92
SUMMER CAPACITY CHARGE = 60.1
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 65.1
AVERAGE BILL FOR RATE PERIOD = 61.92
        *********************************
MONTH RATE PERIOD 5  BEGAN = 12
MONTH RATE PERIOD 5  ENDED = 12
SUMMER DAYS IN RATE PERIOD 5  = 0
WINTER DAYS IN RATE PERIOD 5  = 18
 TTL # DAYS IN RATE PERIOD 5  = 18
BASE CAPACITY CHARGE   = 54.32
BASE CUSTOMER CHARGE   = 5
BASE RATE PERIOD BILL  = 59.32
SUMMER CAPACITY CHARGE = 57.5
SUMMER CUSTOMER CHARGE = 5
SUMMER RATE PERIOD BILL= 62.5
AVERAGE BILL FOR RATE PERIOD = 59.32
```

AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 62.90537
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE   = 12.32822
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 75.23359

***** SUMMARY OF COUNTY 3 *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 3
***** POTOMAC.EDISON.CO.   AVERAGE BILL = 51.59681
***** RAPPAHANNOCK.EL.COOP   AVERAGE BILL = 65.71126
***** VIRGINIA.EL&POWER.CO   AVERAGE BILL = 75.23359
*****   AVERAGE BILL = 0
***** AVERAGE COUNTY ELECTRIC BILL = 64.18
***** AVERAGE COUNTY ELECTRICITY COST = 18.81008

****
*************** N A T U R A L   G A S ***************
****

*************** 1 COLUMBIA NATURAL GAS ***************
MONTH = 1   AND GAS ADJUSTMENT = 0
MONTH = 2   AND GAS ADJUSTMENT = 0
MONTH = 3   AND GAS ADJUSTMENT = 0.055
MONTH = 4   AND GAS ADJUSTMENT = 0.018
MONTH = 5   AND GAS ADJUSTMENT = 0.087
MONTH = 6   AND GAS ADJUSTMENT = 0.104
MONTH = 7   AND GAS ADJUSTMENT = 0.107
MONTH = 8   AND GAS ADJUSTMENT = 0.05
MONTH = 9   AND GAS ADJUSTMENT = 0.034
MONTH = 10 AND GAS ADJUSTMENT = 0.85
MONTH = 11 AND GAS ADJUSTMENT = 0
MONTH = 12 AND GAS ADJUSTMENT = 0.859
        AVERAGE GAS ADJUSTMENT = 18.33644
        ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 2
SUMMER DAYS IN RATE PERIOD 1 = 0
WINTER DAYS IN RATE PERIOD 1 = 59
 TTL # DAYS IN RATE PERIOD 1 = 59
BASE CAPACITY CHARGE   = 353.97
BASE CUSTOMER CHARGE   = 4.5
BASE RATE PERIOD BILL = 358.47
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 358.47
        ****
MONTH RATE PERIOD 2 BEGAN = 3
MONTH RATE PERIOD 2 ENDED = 12
SUMMER DAYS IN RATE PERIOD 2 = 0
WINTER DAYS IN RATE PERIOD 2 = 306
 TTL # DAYS IN RATE PERIOD 2 = 306
BASE CAPACITY CHARGE   = 350.05
BASE CUSTOMER CHARGE   = 4 5
BASE RATE PERIOD BILL = 354.55
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 354.55

SAS

0:50 THURSDAY, JUNE 6, 1985   48

AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY = 356.1836
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 18.33644
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 373.5201

***** SUMMARY OF COUNTY 3 *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** COLUMBIA NATURAL GAS   AVERAGE BILL = 373.5201
*****   AVERAGE BILL = 0
*****   AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 373.52
***** AVERAGE COUNTY NATURAL GAS PRICE = 3.637001

****
*************** O I L   C O M P A N Y ***************
****

******************** CULPEPPER.PETRO.COMP *********************
            ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 7
 TTL # DAYS IN RATE PERIOD 1 = 212
 AVERAGE BILL FOR RATE PERIOD = 145.35
            ****
MONTH RATE PERIOD 2 BEGAN = 8
MONTH RATE PERIOD 2 ENDED = 12
 TTL # DAYS IN RATE PERIOD 2 = 123
 AVERAGE BILL FOR RATE PERIOD = 147.6
            ****
MONTH RATE PERIOD 3 BEGAN = 12
MONTH RATE PERIOD 3 ENDED = 12
 TTL # DAYS IN RATE PERIOD 3 = 30
 AVERAGE BILL FOR RATE PERIOD = 156.3
AVERAGE MONTHLY UTILITY BILL FOR COMPANY/COUNTY = 53658

VIRGINIA HH

****
*************** E L E C T R I C I T Y ***************
****

*************** 1 SHENANDOAH.VAL.ECOOP *****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.01093
MONTH = 2   AND FUEL ADJUSTMENT = 0.01277
MONTH = 3   AND FUEL ADJUSTMENT = 0.01471
MONTH = 4   AND FUEL ADJUSTMENT = 0.0145
MONTH = 5   AND FUEL ADJUSTMENT = 0.01248
MONTH = 6   AND FUEL ADJUSTMENT = 0.00912
MONTH = 7   AND FUEL ADJUSTMENT = 0.00561
MONTH = 8   AND FUEL ADJUSTMENT = 0.00433
MONTH = 9   AND FUEL ADJUSTMENT = 0.00846
MONTH = 10 AND FUEL ADJUSTMENT = 0.0109
MONTH = 11 AND FUEL ADJUSTMENT = 0.01243
MONTH = 12 AND FUEL ADJUSTMENT = 0.011
         AVERAGE FUEL ADJUSTMENT = 10.59677
            ****
MONTH RATE PERIOD 1 BEGAN = 1
MONTH RATE PERIOD 1 ENDED = 12

208

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SUMMER DAYS IN RATE PERIOD 1  = O
WINTER DAYS IN RATE PERIOD 1  = 365
 TTL # DAYS IN RATE PERIOD 1  = 365
BASE CAPACITY CHARGE    = 43.4
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 48.4
SUMMER CAPACITY CHARGE  = O
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL= O
AVERAGE BILL FOR RATE PERIOD = 48.4
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 48.4
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 10.59677
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY  = 58.99677

*************** 2  VIRGINIA.EL&POWER.CO  ****************
MONTH = 1   AND FUEL ADJUSTMENT = 0.015
MONTH = 2   AND FUEL ADJUSTMENT = 0.015
MONTH = 3   AND FUEL ADJUSTMENT = 0.015
MONTH = 4   AND FUEL ADJUSTMENT = 0.015
MONTH = 5   AND FUEL ADJUSTMENT = 0.015
MONTH = 6   AND FUEL ADJUSTMENT = 0.015
MONTH = 7   AND FUEL ADJUSTMENT = 0.0097
MONTH = 8   AND FUEL ADJUSTMENT = 0.0097
MONTH = 9   AND FUEL ADJUSTMENT = 0.0097
MONTH = 10  AND FUEL ADJUSTMENT = 0.0097
MONTH = 11  AND FUEL ADJUSTMENT = 0.0097
MONTH = 12  AND FUEL ADJUSTMENT = 0.0097
        AVERAGE FUEL ADJUSTMENT = 12.32822
        *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 3
SUMMER DAYS IN RATE PERIOD 1  = O
WINTER DAYS IN RATE PERIOD 1  = 90
 TTL # DAYS IN RATE PERIOD 1  = 90
BASE CAPACITY CHARGE    = 58.82
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 63.82
SUMMER CAPACITY CHARGE  = 62
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL= 67
AVERAGE BILL FOR RATE PERIOD = 63.82
        ********************************
MONTH RATE PERIOD 2  BEGAN = 4
MONTH RATE PERIOD 2  ENDED = 5
SUMMER DAYS IN RATE PERIOD 2  = O
WINTER DAYS IN RATE PERIOD 2  = 61
 TTL # DAYS IN RATE PERIOD 2  = 61
BASE CAPACITY CHARGE    = 59.62
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 64.62
SUMMER CAPACITY CHARGE  = 62.8
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL= 67.8
AVERAGE BILL FOR RATE PERIOD = 64.62
        ********************************
MONTH RATE PERIOD 3  BEGAN = 6
MONTH RATE PERIOD 3  ENDED = 9
SUMMER DAYS IN RATE PERIOD 3  = 122
```

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WINTER DAYS IN RATE PERIOD 3  = O
 TTL # DAYS IN RATE PERIOD 3  = 122
BASE CAPACITY CHARGE    = 144.3
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 149.3
SUMMER CAPACITY CHARGE  = 57.5
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = 62.5
AVERAGE BILL FOR RATE PERIOD = 62.5
        ******************************
MONTH RATE PERIOD 4  BEGAN = 10
MONTH RATE PERIOD 4  ENDED = 12
SUMMER DAYS IN RATE PERIOD 4  = O
WINTER DAYS IN RATE PERIOD 4  = 74
 TTL # DAYS IN RATE PERIOD 4  = 74
BASE CAPACITY CHARGE    = 56.92
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 61.92
SUMMER CAPACITY CHARGE  = O
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = O
AVERAGE BILL FOR RATE PERIOD = 61.92
        ******************************
MONTH RATE PERIOD 5  BEGAN = 12
MONTH RATE PERIOD 5  ENDED = 12
SUMMER DAYS IN RATE PERIOD 5  = O
WINTER DAYS IN RATE PERIOD 5  = 18
 TTL # DAYS IN RATE PERIOD 5  = 18
BASE CAPACITY CHARGE    = 54.32
BASE CUSTOMER CHARGE    = 5
BASE RATE PERIOD BILL   = 59.32
SUMMER CAPACITY CHARGE  = O
SUMMER CUSTOMER CHARGE  = 5
SUMMER RATE PERIOD BILL = O
AVERAGE BILL FOR RATE PERIOD = 59.32
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY   = 62.90537
AVERAGE MONTHLY FUEL ADJUSTMENT CHARGE    = 12.32822
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS   = O
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 75.23359

***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF ELECTRIC COMPANIES IN COUNTY = 2
***** SHENANDOAH.VAL.ECOOP   AVERAGE BILL = 58.99677
***** VIRGINIA.EL&POWER.CO   AVERAGE BILL = 75.23359
*****      AVERAGE BILL = O
*****      AVERAGE BILL = O
***** AVERAGE COUNTY ELECTRIC BILL = 67.12
***** AVERAGE COUNTY ELECTRICITY COST = 19.67175


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*************** N A T U R A L   G A S ***************
*********************************************************


************** 1 COLUMBIA.NATURAL.GAS  ****************
MONTH = 1  AND GAS ADJUSTMENT = O
MONTH = 2  AND GAS ADJUSTMENT = O
MONTH = 3  AND GAS ADJUSTMENT = 0.055
MONTH = 4  AND GAS ADJUSTMENT = 0.018
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SAS   0:50 THURSDAY, JUNE 6, 1985   51

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MONTH = 5   AND GAS ADJUSTMENT = 0.087
MONTH = 6   AND GAS ADJUSTMENT = 0.104
MONTH = 7   AND GAS ADJUSTMENT = 0.107
MONTH = 8   AND GAS ADJUSTMENT = 0.05
MONTH = 9   AND GAS ADJUSTMENT = 0.034
MONTH = 10  AND GAS ADJUSTMENT = 0.85
MONTH = 11  AND GAS ADJUSTMENT = 0
MONTH = 12  AND GAS ADJUSTMENT = 0.859
        AVERAGE GAS ADJUSTMENT = 18.33644
        *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 2
SUMMER DAYS IN RATE PERIOD 1  = 0
WINTER DAYS IN RATE PERIOD 1  = 59
 TTL # DAYS IN RATE PERIOD 1  = 59
BASE CAPACITY CHARGE    = 353.97
BASE CUSTOMER CHARGE    = 4.5
BASE RATE PERIOD BILL   = 358.47
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 358.47
        *********************************
MONTH RATE PERIOD 2  BEGAN = 3
MONTH RATE PERIOD 2  ENDED = 12
SUMMER DAYS IN RATE PERIOD 2  = 0
WINTER DAYS IN RATE PERIOD 2  = 306
 TTL # DAYS IN RATE PERIOD 2  = 306
BASE CAPACITY CHARGE    = 350.05
BASE CUSTOMER CHARGE    = 4.5
BASE RATE PERIOD BILL   = 354.55
SUMMER CAPACITY CHARGE = 0
SUMMER CUSTOMER CHARGE = 4.5
SUMMER RATE PERIOD BILL= 0
AVERAGE BILL FOR RATE PERIOD = 354.55
AVERAGE MONTHLY CAPACITY CHARGE FOR COMPANY  = 356.1836
AVERAGE MONTHLY GAS ADJUSTMENT CHARGE   = 18.33644
AVERAGE MONTHLY RIDER/OTHER ADJUSTMENTS  = 0
AVERAGE MONTHLY UTILITY BILL FOR COMPANY = 373.5201

***** SUMMARY OF COUNTY 4  *****
***** NUMBER OF NATURAL GAS COMPANIES IN COUNTY = 1
***** COLUMBIA.NATURAL.GAS  AVERAGE BILL = 373.5201
*****     AVERAGE BILL = 0
*****     AVERAGE BILL = 0
***** AVERAGE COUNTY NATURAL GAS BILL = 373.52
***** AVERAGE COUNTY NATURAL GAS PRICE = 3.637001


*************************************************
*************** O I L   C O M P A N Y ************
*************************************************

********************** ROCKINGHAM.PETROCOOP  **********************
        *********************************
MONTH RATE PERIOD 1  BEGAN = 1
MONTH RATE PERIOD 1  ENDED = 12
 TTL # DAYS IN RATE PERIOD 1  = 365
 AVERAGE BILL FOR RATE PERIOD = 148.5
AVERAGE MONTHLY UTILITY BILL FOR COMPANY/COUNTY = 54202.5
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211

APPENDIX D

"PERCEPTIONS OF ALTERNATIVE HOUSING"

S-141 SURVEY

PERCEPTIONS OF ALTERNATIVE HOUSING

Southern Regional Project No. 141

COLUMN

1. STATE_____ 2. COUNTY_____ — 1

3. RESPONDENT NO._____ 4. INTERVIEWER_____ — 2

5. DATE _____ TIME_____a.m /p.m. ___ ___ ___ 3-5

Interviewer Statement:

Hello, my name is_____.I am working for the_____ University Agricultural Experiment Station on a regional research project concerned with housing. By housing, we mean your house or home or any type of place your family could live now or in the future.

The information that we are gathering will be used to make decisions about improving present and future housing quality. You will be helping us determine what the present housing situation is, what people feel their needs and preferences are, and what might be done about them.

All of the information will be combined to get an overall picture of housing and what should be done to help people have better housing. None of the information will identify a person or his/her home. Your help will assist us in finding what can be done to assure good housing for all people.

NOTE TO THE INTERVIEWER: The following is to be filled in by you AFTER THE INTERVIEW or ATTEMPT TO INTERVIEW is COMPLETED.

Secured Interview: Date___ / ___ / ___   Time am/pm_____Start
                                                              am/pm_____Finish

Made Appointment
  to Return: Date___ / ___ / ___   Time am/pm_____

6. COULD NOT COMPLETE INTERVIEW: Reason 1. Refused _____ 2. Sick _____ 3. Not at — 6
home _____ 4. Could not locate dwelling _____ 5. Not a house _____ 6. Farm household
_____

7. PERSON INTERVIEWED: 1. Male head _____ 2. Female head _____ 3. Male co-head _____ — 7
4. Female co-head _____ 5. Spouse _____ 6. Adult son or daughter _____ 7. Other (specify)
_____

8a. TYPE OF STRUCTURE: 1. Single Family _____ 2. Multi-family _____ — 8
8b. HOUSING TYPE: 1. Mobile home _____ 2. Modular _____ 3. Conventional _____
4. Apartment _____ 5. Other (Specify) _____ 9. Don't know _____ — 9
9. LOCATION OF HOUSING/DWELLING UNIT: — 10
   1. Open country _____
   2. Suburban area _____
   3. Incorporated area (population 5,000) _____
   4. Town (population 5,001 - 10,000) _____
   5. Town (population 10,001-25,000) _____
   6. Town (population over 25,000) _____

I. Present Housing Situation:

First, I want to ask you some questions about your present housing unit or dwelling.
10. HOW OLD IS YOUR HOUSING/DWELLING UNIT?   ___ ___ ___ 11-13
   1. _____years
   9. DK_____
11. GIVE ME AN ESTIMATE OF THE NUMBER OF SQUARE FEET IN HOUSING/DWELLING UNIT:
   1. _____sq. ft.   ___ ___ ___ ___ 14-17
   9. DK_____
12. DO YOU: — 18
   1. Own (paid for)_____ (skip to question 14)
   2. Own (are buying)_____
   3. Rent (or lease)_____
   4. Receive for services_____ (skip to question 14)
   5. Other (Specify _____
13. HOW MUCH IS YOUR MONTHLY HOUSE PAYMENT OR RENT?
   1. $_____   ___ ___ ___ ___ 19-22

14. PLEASE GIVE ME AN ESTIMATE OF THE FOLLOWING UTILITY COSTS FOR 1980.

	Highest Monthly	Lowest Monthly	Average Monthly	NA (888)	DK (999)	
1. Electricity	_____	_____	_____	____	____	23-25
2. Gas (natural)	_____	_____	_____	____	____	26-28
3. Gas (bottled)	_____	_____	_____	____	____	29-31
4. Oil	_____	_____	_____	____	____	32-34
5. Water	_____	_____	_____	____	____	35-37
6. Wood	_____	_____	_____	____	____	38-40
7. Combined/ Other (Specify)	_____	_____	_____	____	____	41-43

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                                                    _____  44-46
                                                    _____  47-49
                                                    _____  50-52
                                                    _____  53-55
                                                    _____  56-58
                                                    _____  59-61
                                                    _____  62-64
                                                    _____  65-67
                                                    _____  68-70
                                                    _____  71-73
                                                    _____  74-76
                                          REPEAT
                                          COLUMNS     1-5
                                                    ___    6
                                                    _____  7-9
                                                    _____  10-12
                                                    _____  13-15
```

15. DOES YOUR HOME HAVE ANY OF THE FOLLOWING ENERGY CHARACTERISTICS? (Check as many as apply)
    1. Active solar collectors_____
    2. Passive use of solar_____   ___ 16
    3. Earth sheltered_____   ___ 17
    4. None_____   ___ 18
    9. DK_____   ___ 19
        ___ 20

16. HOW MANY ROOMS ARE IN YOUR DWELLING (excluding bathrooms and closets)?
    1. _____(Record actual number)   _____ 21-22

17. HOW MANY BEDROOMS ARE IN YOUR DWELLING?
    1. _____(Record actual number)   ___ 23

18. HOW MANY BATHROOMS ARE IN YOUR DWELLING?   ___ 24
    1. 1_____
    2. 1½_____
    3. 2_____
    4. 2½_____
    5. 3_____
    6. More than 3_____
    7. None_____

19. DO YOU HAVE RUNNING WATER IN THE KITCHEN?   ___ 25
    1. Cold only_____
    2. Hot and cold_____
    3. None_____

20. DO YOU HAVE RUNNING WATER IN THE BATHROOM?   ___ 26
    1. Cold only_____
    2. Hot and cold_____
    3. None_____

21. HOW IS YOUR DWELLING COOLED? (Check as many as apply)   ___ 27
    1. Window or attic fan_____   ___ 28
    2. Free standing fans_____   ___ 29
    3. Window air conditioners_____   ___ 30
    4. Central air conditioning_____   ___ 31
    5. Other (specify)_____   ___ 32
    6. NA_____

22. HOW IS YOUR DWELLING HEATED? (Check as many as apply)
    1. Floor furnace_____
    2. Wood stove_____
    3. Space heaters_____
    4. Radiators_____
    5. Central heating_____
    6. Solar heater_____
    7. Baseboard or periphery heating_____
    8. Other (specify) _ ._____

    ____ 33
    ____ 34
    ____ 35
    ____ 36
    ____ 37
    ____ 38
    ____ 39
    ____ 40

23. WHAT FUEL IS USED FOR HEATING WATER? (check as many as apply)
    1. Gas (natural)_____
    2. Gas (bottled)_____
    3. Electricity_____
    4. Solar assisted_____
    5. Other (specify) _____
    8. NA_____

    ____ 41
    ____ 42
    ____ 43
    ____ 44
    ____ 45
    ____ 46

24. WHICH OF THE FOLLOWING DOES YOUR DWELLING HAVE? (Is it partial or complete?):

	NONE (0)	PARTIAL (1)	COMPLETE (2)	NA (8)	DK (9)	
1. Ceiling insulation	____	____	____	____	____	47
2. Wall insulation	____	____	____	____	____	48
3. Floor insulation	____	____	____	____	____	49
4. Storm windows	____	____	____	____	____	50
5. Double pane windows	____	____	____	____	____	51
6. Plastic covering on windows	____	____	____	____	____	52
7. Storm doors	____	____	____	____	____	53
8. Weather stripping	____	____	____	____	____	54
9. Caulking	____	____	____	____	____	55
10. Exterior insulation around hot water heater	____	____	____	____	____	56

25. DO ANY OF THE FOLLOWING CONDITIONS CAUSE YOU OR YOUR HOUSEHOLD PROBLEMS IN YOUR HOME? (Is it to a major or minor extent?)

	CONDITION	NO PROBLEM (0)	MINOR PROBLEM (1)	MAJOR PROBLEM (2)	NA (8)	
1.	Leak(s) in the roof					57
2.	Crack(s) in walls or ceiling					58
3.	Sag(s) or bulge(s) in walls or ceilings					59
4.	Peeling paint on inside walls					60
5.	Peeling paint on outside walls					61
6.	Decay of porch and outside steps					62
7.	Decay of door and window frames					63
8.	Uneven floors					64
9.	Holes or badly worn places in floor					65
10.	Broken or missing window panes					66

3

11.	Broken or missing materials on exterior walls or foundation						___ 67
12.	Missing or torn screens						___ 68
13.	Quality of water						___ 69
14.	Condition of heating system						___ 70
15.	Condition of cooling system						___ 71
16.	Condition of plumbing system						___ 72
17.	Condition of electrical system						___ 73

II. Decision-Making Practices:

26. HOW LONG HAVE YOU LIVED IN THIS HOUSE? (Record actual number)   ___ ___ ___ 74-76
     1. Years _____
     9. DK _____   REPEAT
     (If respondent lived in this house less than 10 years, ask)   COLUMNS 1-5
27. WHY DID YOU MOVE FROM YOUR FORMER HOME? (Check as many as apply)   ___ 6
     1. Changes in employment _____   ___ 7
     2. Changes in spatial needs _____   ___ 8
     3. Wanted to build or buy _____   ___ 9
     4. Decrease in income _____   ___ 10
     5. Increase in income _____   ___ 11
     6. Family reasons _____   ___ 12
     7. Dissatisfied with location _____   ___ 13
     8. Dissatisfied with home _____   ___ 14
     9. Displaced _____   ___ 15
     10. Economic reasons _____   ___ 16
     11. Other (specify) _____   ___ 17
     88. NA _____   ___ 18
28. IN WHAT TYPE OF HOME DID YOU LAST LIVE?
     1. Single family _____   ___ 19
     2. Apartment _____
     3. Townhouse _____
     4. Mobile home _____
     5. Other (specify) _____
     8. NA _____
29. WHY DID YOU/YOUR HOUSEHOLD SELECT THE DWELLING/HOUSE YOU ARE NOW LIVING IN?
     (Check as many as apply)
     1. Affordable _____   ___ 20
     2. Location; neighborhood _____   ___ 21
     3. House design; plan and layout _____   ___ 22
     4. Built new house _____   ___ 23
     5. Provide more space _____   ___ 24
     6. Limited choice; needed immediately _____   ___ 25
     7. Other (specify) _____   ___ 26
     8. NA _____   ___ 27
     9. DK _____   ___ 28
30. WHAT DO YOU/YOUR HOUSEHOLD LIKE BEST ABOUT WHERE YOU LIVE?
     (Check only one)
     1. Neighborhood and neighbors _____   ___ 29
     2. Location _____
     3. Privacy _____
     4. House design: size, plan and layout _____
     5. Ease of maintenance and convenience _____
     6. Site and yard _____
     7. Rent includes utilities _____
     8. Other (specify) _____

4

31. WHAT THING DO YOU LIKE LEAST ABOUT WHERE YOU LIVE? (Check only one)   30
  1. Neighborhood and neighbors .
  2. Location _ _ _
  3. Lack of privacy   . ___
  4. House design. size. plan, and layout
  5. Amount of maintenance and inconvenience .
  6. Site and yard   ____.
  7. Cost of unit _____ _
  8 Other (specify) ____ .___ .. . _ .
32. HOW SATISFIED ARE YOU WITH YOUR PRESENT DWELLING?   .. 31
  1. Very satisfied __ ____.
  2. Satisfied _____
  3. Neither satisfied or dissatisfied ... _ ..
  4. Dissatisfied __ ____
  5. Very dissatisfied _____
33. WOULD YOU *LIKE* TO MOVE INTO ANOTHER DWELLING WITHIN THE NEXT COUPLE OF YEARS?   32
  1. Yes _____
  2. No _____. (skip to question 35)
  3. Maybe _____
34. WHY WOULD YOU LIKE TO MOVE? (Check as many as apply)
  1. Present house is wrong size ____ ___   _. 33
  2. Plan to build or buy _____   ____ 34
  3. Improve location _____   .___ 35
  4. Dissatisfied with conditions of present dwelling _____   __ 36
  5. Change in family structure _____   _ __ 37
  6. Plan to change jobs _____   ___ 38
  7. Other (specify) __._____ _____ ___ _____ ____-_____ __ _____ .._____   _ __ 39
  8. NA _____   ____ 40
(If YES or MAYBE in question 33, skip to question 36)
35. WHY WOULD YOU NOT LIKE TO MOVE? (Check as many as apply)
  1. House meets family needs _____   __. 41
  2. Economic reasons _____   __ 42
  3. Close to relatives _____   .__ 43
  4. Privacy _____   _.._ 44
  5. Location _____   .___ 45
  6. Convenience _____   ___ 46
  7. Other (specify) _____   ___ 47
  8. NA _____   __ 48
36. DO YOU HAVE DEFINITE PLANS TO MOVE INTO A NEW OR DIFFERENT HOUSE WITHIN THE NEXT COUPLE OF YEARS?   ___ 49
  1. Yes _____
  2. No _____
(If NO in 33 and YES in 36, answer question 37)
37. WHY DO YOU PLAN TO MOVE WITHIN THE NEXT FEW YEARS? (Check as many as apply)
  1. Present house is wrong size ____   ___ 50
  2. Plan to build or buy ____   ___ 51
  3. Improve location ____   ___ 52
  4. Dissatisfied with conditions of present dwelling ____   ___ 53
  5. Change in family structure _____   ___ 54
  6. Plan to change jobs _____   ___ 55
  7. Other (specify) _____   ___ 56
  8. NA _____   ___ 57
(If YES or MAYBE in question 33 and NO in question 36, answer question 38.)
38. WHY DO YOU NOT PLAN TO MOVE WITHIN THE NEXT FEW YEARS? (Check as many as apply)
  1. House meets family needs _____   ___ 58
  2. Economic reasons _____   ___ 59
  3. Close to relatives _____   ___ 60
  4. Privacy _____   ___ 61
  5. Location _____   ___ 62
  6. Convenience _____   ___ 63
  7. Other (specify) _____   ___ 64
  8. NA _____   ___ 65

5

39. HOW MUCH DO THESE PEOPLE HELP IN MAKING DECISIONS ABOUT YOUR HOUSING?

	NOT AT ALL (0)	SOME (1)	VERY MUCH (2)	NA (8)	
1. Male Head/Co-head					___ 66
2. Female Head/Co-head					___ 67
3. Children					___ 68
4. Other household members					___ 69
5. Other relatives					___ 70
6. Housing professional (real estate agents, engineers, etc.)					___ 71
7. Friends					___ 72
8. Others (specify)					___ 73

_____

40. SOME LOCAL AREAS ARE NOW PROVIDING FREE HOUSING INFORMATION. SERVICE. IF IT WERE AVAILABLE IN YOUR COMMUNITY, WOULD YOU USE IT?   ___ 74
  1. Yes, definitely _____
  2. Yes, maybe _____
  3. No _____ .
  9. DK _____

REPEAT
COLUMNS
1-5

41. IF YOU WANTED TO MODIFY OR CHANGE YOUR DWELLING, WHAT KINDS OF INFORMATION WOULD BE MOST HELPFUL TO YOU? (Check as many as apply)
  1. Financing _____   ___ 6
  2. Energy Conservation _____   ___ 7
  3. Building methods _____   ___ 8
  4. Buying a house _____   ___ 9
  5. Housing maintenance _____   ___ 10
  6. Remodeling _____   ___ 11
  7. Insurance and taxes _____   ___ 12
  8. Other (specify) _____   ___ 13
  9. NA—do not want to change dwelling _____   ___ ·14
      ___ 15

MANY PROFESSIONALS FEEL THAT A VERY IMPORTANT FACTOR IN HOW PEOPLE MAKE DECISIONS ABOUT THEIR HOUSING IS THE COST OF ENERGY. FOR THE PAST SEVERAL YEARS WE HAVE HEARD A GREAT DEAL ABOUT A SHORTAGE OF ENERGY.

42. DO YOU BELIEVE THERE IS AN ENERGY CRISIS?   ___ 16
  1. Yes _____
  2. No _____   (skip to question 44)
  3. Not sure _____ (skip to question 44)

43. HOW SEVERE DO YOU BELIEVE THE ENERGY CRISIS IS?   ___ 17
  1. Not at all severe _____
  2. Somewhat severe _____
  3. Severe _____
  4. Very severe _____

44. DO YOU BELIEVE THAT THE ENERGY SITUATION HAS HAD ANY IMPACT UPON YOUR PRESENT DWELLING OR UPON HOW YOU MAKE DECISIONS ABOUT YOUR HOUSING?   ___ 18
  1. Yes _____
  2. No _____
  9. DK _____

45. ASSOCIATED WITH THE ENERGY CRISIS IS THE INCREASING COST OF UTILITIES, PARTICULARLY HEATING AND COOLING EXPENSES. HAVE YOU OR OTHER MEMBERS OF YOUR HOUSEHOLD MADE CHANGES THAT WOULD REDUCE YOUR UTILITY COSTS?   ___ 19
  1. Yes _____
  2. No _____ (skip to question 47)

46. WHAT ARE SOME OF THESE CHANGES? (Check as many as apply)
  1. Lowered thermostat in winter _____   ___ 20
  2. Raised thermostat in summer _____   ___ 21
  3. Added or increased insulation _____   ___ 22
  4. Added storm or double-pane windows _____   ___ 23

     5. Used wood stove or energy efficient heater _____   ___ 24

     6. Used appliances more efficiently _____   ___ 25

     7. Lowered water heater thermostat _____   ___ 26

     8. Reduced wattage or lighting use _____   ___ 27

     9. Weatherstripped and caulked _____   ___ 28

    10. Closed off rooms _____   ___ 29

    11. Covered windows with plastic _____   ___ 30

    12. Used fans instead of air conditioner _____   ___ 31

    13. Added insulation to water heater _____   ___ 32

    14. Other (specify) _____   ___ 33

    88. NA _____   ___ 34

47. HAVE YOU MADE ANY CHANGES THAT WOULD REDUCE OTHER HOUSING COSTS?

     1. Yes _____   ___ 35

     2. No _____ (skip to question 49)

48. WHAT ARE SOME OF THESE CHANGES? (Check as many as apply)

     1. Moved to less expensive dwelling _____   ___ 36

     2. Deferred maintenance and repairs _____   ___ 37

     3. Did own maintenance and repairs _____   ___ 38

     4. Changed to low maintenance materials _____   ___ 39

     5. Doubled-up with another household _____   ___ 40

     6. Other (specify) _____   ___ 41

     8. NA _____   ___ 42

49. HAVE YOU MADE ANY CHANGES THAT WOULD REDUCE TRANSPORTATION COSTS?

     1. Yes _____   ___ 43

     2. No _____ (skip to question 51)

50. WHAT ARE SOME OF THE CHANGES? (Check as many as apply)

     1. Made fewer trips _____   ___ 44

     2. Used carpool _____   ___ 45

     3. Used more efficient car _____   ___ 46

     4. Rode bus or public transportation _____   ___ 47

     5. Moved closer to job _____   ___ 48

     6. Other (specify) _____   ___ 49

     8. NA _____   ___ 50

51. DO YOU PLAN TO MAKE ANY CHANGES, REPAIRS, OR IMPROVEMENTS IN YOUR DWELLING/
HOUSING UNIT IN THE NEXT COUPLE OF YEARS?   ___ 51

     1. Yes _____

     2. No _____ (skip to question 53)

     8. NA _____ (skip to question 53)

     9. DK _____ (skip to question 53)

52. WHAT TYPE OF IMPROVEMENT OR REPAIRS DO YOU PLAN TO MAKE? (Check as many as apply)

     1. Repairing roof _____   ___ 52

     2. Adding rooms _____   ___ 53

     3. Adding storm windows or doors _____   ___ 54

     4. Adding flooring _____   ___ 55

     5. Painting - exterior _____   ___ 56

     6. Painting - interior _____   ___ 57

     7. Remodeling kitchen/bath _____   ___ 58

     8. Making cosmetic changes (building cabinets, book shelves, paneling, etc.) _____   ___ 59

     9. Adding siding _____   ___ 60

    10. Repairing or improving plumbing _____   ___ 61

    11. Repairing or improving electrical system _____   ___ 62

    12. Improving landscape _____   ___ 63

    13. Adding sunporch _____   ___ 64

    14. Enclosing patio with glass _____   ___ 65

    15. Adding greenhouse _____   ___ 66

    16. Adding insulation _____   ___ 67

    17. Caulking and weatherstripping _____   ___ 68

    18. Adding solar panels _____   ___ 69

    19. Adding solar water heater _____   ___ 70

    20. Other (specify) _____   ___ 71

    88. NA _____   ___ 72

IN RECENT YEARS, ARCHITECTS, ENGINEERS AND OTHER HOUSING PROFESSIONALS HAVE BEEN DESIGNING NEW TYPES OF HOUSING THAT MAY REDUCE THE AMOUNT OF ENERGY USED IN BUILDING AND IN HEATING AND COOLING HOUSES. WE'RE GOING TO CALL THESE ENERGY EFFICIENT HOMES INNOVATIVE HOUSING TYPES.

53. WHICH OF THE FOLLOWING TYPES HAVE YOU HEARD ABOUT, READ ABOUT, SEEN, LIVED IN? (Check as many as apply)

	HEARD ABOUT (a)	READ ABOUT (b)	SEEN (c)	LIVED IN (d)	NEVER HEARD OF/DK (e)
1. Passive solar					
2. Active solar					
3. Manufactured home/ mobile home					
4. Apartment/multifamily					
5. Earth-sheltered/ underground					
6. Retrofitted (energy saving improved) home					

73 74 75 76 77
REPEAT COLUMNS 1-5

— 6

7 8 9 10 11

12 13 14 15 16

17 18 19 20 21

22 23 24 25 26

27 28 29 30 31

54. HAVE YOU EVER LOOKED FOR ADDITIONAL INFORMATION ABOUT THESE HOUSING TYPES? (Check as many as apply)
1. Passive solar _____   — 32
2. Active solar _____   — 33
3. Manufactured/mobile home _____   — 34
4. Apartment/multifamily _____   — 35
5. Earth sheltered/underground _____   — 36
6. Retrofitted (energy saving improved) home _____   — 37
7. None _____ (skip to question 56)   — 38

55. AFTER GATHERING INFORMATION, HAVE YOU TRIED TO DETERMINE THE ADVANTAGES AND DISADVANTAGES OF ANY OF THE HOUSING TYPES FOR YOUR OWN PARTICULAR USE? (Check as many as apply)
1. Passive solar _____   — 39
2. Active solar _____   — 40
3. Manufactured/mobile home _____   — 41
5. Apartment/multifamily _____   — 42
5. Earth sheltered/underground _____   — 43
6. Retrofitted (energy saving improved) home _____   — 44
7. None _____   — 45

III. Consumer Acceptance:

Now, I am going to show you pictures and/or sketches of different innovative housing types. All of these housing types can reduce cost and increase energy efficiency if they are well constructed. (Show pictures and read definitions)

56a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT IN THIS AREA, WOULD YOU BUY OR CONSIDER LIVING IN A CONVENTIONALLY BUILT HOUSE?   — 46
1. Definitely would consider _____
2. Probably would consider _____
3. Undecided _____
4. Probably would not consider _____
5. Definitely would not consider _____

56b. WHAT WOULD YOU LIKE ABOUT LIVING IN A CONVENTIONALLY BUILT HOUSE?   47

48

49

50

51

52

56c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN A CONVENTIONALLY BUILT HOUSE?   53

54

55

56

57

58

57a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT, WOULD YOU BUY OR CONSIDER LIVING IN A MANUFACTURED HOME/MOBILE HOME?
1. Definitely would consider ___
2. Probably would consider_ __
3. Undecided ___
4. Probably would not consider___
5. Definitely would not consider___

59

57b. WHAT WOULD YOU LIKE ABOUT LIVING IN A MANUFACTURED HOME/MOBILE HOME?   60

61

62

63

64

65

57c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN A MANUFACTURED HOME/MOBILE HOME?   66

67

68

69

70

71

9

58a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT WOULD YOU
BUY OR CONSIDER LIVING IN AN APARTMENT/MULTIFAMILY UNIT?   ___ 72
1. Definitely would consider _____
2. Probably would consider _____
3. Undecided _____
4. Probably would not consider _____
5. Definitely would not consider _____

58b. WHAT WOULD YOU LIKE ABOUT LIVING IN AN APARTMENT/MULTIFAMILY UNIT?   ___ 73

                                                                               ___ 74

                                                                               ___ 75

                                                                               ___ 76

                                                                               ___ 77

                                                                               ___ 78

58c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN AN APARTMENT/MULTIFAMILY UNIT?   REPEAT
                                                                               COL. 1-5

                                                                               ___ 6

                                                                               ___ 7

                                                                               ___ 8

                                                                               ___ 9

                                                                               ___ 10

                                                                               ___ 11

                                                                               ___ 12

59a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT, WOULD YOU
BUY OR CONSIDER LIVING IN A RETROFITTED (ENERGY SAVING IMPROVED) HOME?   ___ 13
1. Definitely would consider _____
2. Probably would consider _____
3. Undecided _____
4. Probably would not consider _____
5. Definitely would not consider _____

59b. WHAT WOULD YOU LIKE ABOUT LIVING IN A RETROFITTED (ENERGY SAVING IMPROVED)
HOME?   ___ 14

                                                                               ___ 15

                                                                               ___ 16

                                                                               ___ 17

                                                                               ___ 18

                                                                               ___ 19

10

223

59c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN A RETROFITTED (ENERGY SAVING IMPROVED) HOME?

____ 20

____ 21

____ 22

____ 23

____ 24

____ 25

60a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT, WOULD YOU BUY OR CONSIDER LIVING IN A PASSIVE SOLAR HOME?
1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

____ 26

60b. WHAT WOULD YOU LIKE ABOUT LIVING IN A PASSIVE SOLAR HOME?

____ 27

____ 28

____ 29

____ 30

____ 31

____ 32

60c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN A PASSIVE SOLAR HOME?

____ 33

____ 34

____ 35

____ 36

____ 37

____ 38

61a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT, WOULD YOU BUY OR CONSIDER LIVING IN AN ACTIVE SOLAR HOME?
1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

____ 39

11

61b. WHAT WOULD YOU LIKE ABOUT LIVING IN AN ACTIVE SOLAR HOME?

___ 40

___ 41

___ 42

___ 43

___ 44

___ 45

61c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN AN ACTIVE SOLAR HOME?

___ 46

___ 47

___ 48

___ 49

___ 50

___ 51

62a. IF YOU WERE MOVING TO A NEW AREA OR INTO A DIFFERENT DWELLING UNIT, WOULD YOU BUY OR CONSIDER LIVING IN AN EARTH SHELTERED/UNDERGROUND HOME?

___ 52

1. Definitely would consider_____
2. Probably would consider_____
3. Undecided_____
4. Probably would not consider_____
5. Definitely would not consider_____

62b. WHAT WOULD YOU LIKE ABOUT LIVING IN AN EARTH SHELTERED/UNDERGROUND HOME?

___ 53

___ 54

___ 55

___ 56

___ 57

___ 58

62c. WHAT WOULD YOU DISLIKE ABOUT LIVING IN AN EARTH SHELTERED/UNDERGROUND HOME?

___ 59

___ 60

___ 61

___ 62

___ 63

___ 64

63. I WOULD LIKE YOU TO LOOK AT THESE DWELLING UNITS AGAIN AND TELL ME WHICH HOME
    YOU LIKE BEST (1), WHICH YOU LIKE SECOND BEST (2), WHICH HOME YOU LIKE LEAST (7),
    WHICH HOME YOU LIKE NEXT TO LEAST (6). NOW OF THE ONES LEFT, WHICH DO YOU LIKE
    BEST (3)? WHICH DO YOU LIKE LEAST (5)? THEN THE ONE LEFT IS (4)
    1. Conventionally built home _____   65
    2. Manufactured home/mobile home_____   .   66
    3. Apartment/multifamily unit_____   67
    4. Retrofitted (energy saving improved) home_____   68
    5. Passive solar home_____   69
    6. Active solar home_____   70
    7. Earth sheltered/underground home _____   71

64. *Demographic Data* - WE NEED SOME INFORMATION ABOUT EACH PERSON IN THE HOUSEHOLD:

HOUSEHOLD MEMBER	RELATION TO HEAD	SEX	AGE	RACE	DEGREE OF DISABILITY	MARITAL STATUS	EDUCATION	EMPLOYMENT	OCCUPATION

Place an asterisk or circle respondent	1-head
	2-co-head
	3-spouse
	4-offspring
	5-parent
	6-sibling
	7-other
	  -relative
	8-none
		1-male
		2-female
			Code actual years	1-Afro-American
				2-White
				3-Hispanic
				4-American Indian
				5-Other
					1-none
					2-mild
					3-moderate
					4-extreme
						1-single
						2-married
						3-widowed
						4-divorced
						5-separated
						6-other
							Code actual years
							1-12;
							13-vocational;
							14, 15, 16-college graduate; 17-post graduate
								01-full-time
								02-part-time
								03-retired
								04-unemployed
								05-student
								06-homemaker
								07-full & student
								08-part & student
								09-part & retired
								10-part & home-
								    maker
								11-NA
								12-other-specify
									01-Professional/technical
									02-Semi-professional
									03-Farmers & Farm mgrs.
									04-Mgrs , officials & proprietors
									05-Clerical
									06-Sales
									07-Craftsmen, foremen
									08-Operators
									09-Farm laborers
									10-Laborers
									11-Domestic service workers
									12-Other service workers
									13-Retired
									14-Other (specify)

M HD									
F HD									

14

65. Now we need to know something about your family income for 1980. This information is anonymous and will not have your name associated with it in any way. It will be used only for classification purposes to group people together who have similar incomes.

HOUSEHOLD MEMBER	HOW IS HOUSEHOLD MEMBER PAID? 1. Weekly 2. Bi-weekly 3. Monthly 4. Annually 5. Other-Specify	HOW MUCH TIME DID HOUSEHOLD MEMBER WORK DURING 1980? Record actual number of months. (01-12)	AMOUNT OF INCOME FOR 1980			
			TAKE HOME PAY	SUPPLEMENTAL INCOME		
			(Hand Income Card to respondent that corresponds to pay period) From these cards, please give me the number that corresponds to the amount of take home pay received by each household member. (Record number)	Did any household member receive supplemental income during the year? 1. Yes 2. No	What type of supplemental income? (Check as many as apply) 1. Investment (stock, bonds, etc.) 2. Pension or retirement 3. Government funding (welfare, AFDC, Section 8, etc.) 4. Second job 5. Social Security (handicapped, elderly, dependent children) 6. Alimony 7. Other	(Give respondent Annual Income Card) Please give me the number that corresponds to the amount of supplemental income received by each household member. (Record number)
MH						
FH						
OTHER HOUSE-HOLD MEMBER						
OTHER HOUSE-HOLD MEMBER						
OTHER HOUSE-HOLD MEMBER						
OTHER HOUSE-HOLD MEMBER						
OTHER HOUSE-HOLD MEMBER						
OTHER HOUSE-HOLD MEMBER						

15

227

				REPEAT COLUMNS 1-5 BLANK 6

1A. (Ask homeowners only). DO YOU CONSIDER YOUR HOME A GOOD INVESTMENT? — 7
    1. Yes ___
    2. No ___

2A. (Ask everyone the remaining questions). DO YOU CONSIDER YOUR HOME/DWELLING UNIT WORTH THE AMOUNT OF MONEY YOU ARE PRESENTLY PAYING/HAVE   PAID FOR IT? — 8
    1. Yes ___
    2. No ___
    3. Unsure ___

3A. WOULD YOU RECOMMEND THE TYPE OF DWELLING/HOUSE IN WHICH YOU LIVE TO SOME-ONE LOOKING TO BUY OR RENT A HOME?   . — 9
    1. Yes ___
    2. No ___

4A. HOW SATISFIED ARE YOU WITH THE PHYSICAL LOCATION OF YOUR HOME AND EACH OF THE FOLLOWING?
    VS — Very satisfied
    S — Satisfied
    D — Dissatisfied
    VDS — Very dissatisfied
    DNH — Do not have

	VS	S	D	VDS	DNH		
1.	___	___	___	___	___	Convenience to work	— 10
2.	___	___	___	___	___	Convenience to shopping areas	— 11
3.	___	___	___	___	___	Availability of public transportation	— 12
4.	___	___	___	___	___	Community services (fire dept., police dept., etc.)	— 13
5.	___	___	___	___	___	Availability of medical services .	— 14

5A. HOW SATISFIED ARE YOU WITH THE SPACE AVAILABLE IN YOUR HOME FOR THE FOLLOW-ING PURPOSES?

	VS	S	D	VDS	DNH		
1.	___	___	___	___	___	Preparing food (kitchen space)	— 15
2.	___	___	___	___	___	Laundering clothes	— 16
3.	___	___	___	___	___	Food storage (cabinet space)	— 17
4.	___	___	___	___	___	Closet space	— 18
5.	___	___	___	___	___	Other general storage	— 19
6.	___	___	___	___	___	Outdoor storage	— 20

6A. THE FOLLOWING STATEMENTS HAVE BEEN MADE BY PEOPLE WHO LIVE IN SIMILAR TYPE NEIGHBORHOODS AND SIMILAR TYPE HOMES. LISTEN TO EACH STATEMENT AND TELL ME WHETHER YOU AGREE OR DISAGREE WITH EACH STATEMENT AS IT RELATES TO YOU AND YOUR FAMILY.

		Can't say	Agree	Disagree	
1.	Home is a place where people get in each other's way.	___	___	___	— 21
2.	I often feel I don't have enough room to move around in.	___	___	___	— 22
3.	Most of the time there are just too many people around.	___	___	___	
4.	It doesn't bother me that I am able to hear everyday noises from my neighbors.	___	___	___	— 23
					— 24

7A. NOW, I WANT TO ASK YOU ABOUT SOME GENERAL FEATURES OF YOUR HOME/DWELLING? HOW SATISFIED ARE YOU WITH:

If dissatisfied why?

	VS	S	D	VDS	DNH		
1.	___	___	___	___	___	Size of the rooms	___ 25
2.	___	___	___	___	___	Arrangement of rooms (the way each is used)	___ 26
3.	___	___	___	___	___	Overall comfort of the home	___ 27
4.	___	___	___	___	___	Appearance of home outside	___ 28
5.	___	___	___	___	___	Privacy from neighbors or the public	___ 29
6.	___	___	___	___	___	Privacy within your home	___ 30
7.	___	___	___	___	___	Air conditioning	___ 31
8.	___	___	___	___	___	Heating	___ 32
9.	___	___	___	___	___	Appearance inside	___ 33
10.	___	___	___	___	___	Plumbing	___ 34
11.	___	___	___	___	___	Number of bedrooms	___ 35
12.	___	___	___	___	___	Number of bathrooms	___ 36
13.	___	___	___	___	___	Electrical facilities (outlets, wiring, & sockets)	___ 37
14.	___	___	___	___	___	Water supply (quality and pressure)	___ 38

8A. HOW IMPORTANT IS IT TO YOU TO OWN A HOME?
    1. Very important ___
    2. Important ___
    3. Not very important ___
    4. Of no importance ___

                                                   ___ 39

9A. WHAT DOES THE TERM "HOME" MEAN TO YOU?

_____ ___ ___ 40-41

Note to Interviewer:

10A. IF THIS IS A MOBILE HOME IS IT LOCATED IN A MOBILE HOME PARK?
    1. Yes ___
    2. No ___

                                                   ___ 42

1 5 79-80

APPENDIX E

LIST OF UTILITY COMPANIES

LIST OF UTILTIY COMPANIES USED IN STUDY
BY STATE AND FUEL TYPE

COMPANY NAME	TYPE	COUNTIES SERVED

ARKANSAS

Electricity

Arkansas Power & Light Co.	Investor	Stone
		Baxter
		Ouachita
Southwest Electric Power Co.	Investor	Sevier
Petit Jean Electric Coop.	Coop	Stone
First Electric Coop. Corp.	Coop	Stone
North Arkansas Electric Coop.	Coop	Baxter
Southwest Arkansas Electric Power Coop., Corp.	Coop	Sevier
Rich Mountain Electric Coop.	Coop	Sevier
Ouachita Electric Coop., Corp.	Coop	Ouachita

Natural Gas

Arkansas Western Gas	Investor	Baxter
Arkansas Louisiana Gas Co.	Investor	Ouachita
City of DeQueen	Municip	Sevier
City of Gillham	Municip	Sevier
City of Lockesburg	Municip	Sevier

FLORIDA

Electricity

Gulf Power Company	Investor	Washington
		Walton
Florida Power & Electric Co.	Investor	Okeechobee
		Putnam
Gulf Coast Electric Coop.	Coop	Washington
West Florida Electric Coop.	Coop	Washington
Choctawhachee Electric Coop.	Coop	Walton
Glades Electric Coop.	Coop	Okeechobee
Clay Electric Coop.	Coop	Putnam

Natural Gas

City of Chipley	Municip	Washington

APPENDIX F

COVER LETTER AND RATE FORM

Oklahoma State University / STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST BUILDING
(405) 624-5048

COLLEGE OF HOME ECONOMICS
Department of Housing, Interior Design
and Consumer Studies

April 23, 1985

During July and August, 1981, 157 households were surveyed
in four Florida counties in conjunction with a Southern
Regional Housing Research Project, "Housing for Low- and
Moderate-Income Families." The three part survey was con-
ducted in Walton, Washington, Okeechobee and Putnam counties
and included measurements of the family's present housing
situation, decision-making processes, and consumer accep-
tance of innovative housing alternatives. One portion of
the questionnaire concerned utility costs for the period of
January 1 to December 31, 1980. In order to complete data
analyses, it is necessary to secure information on rates
that were in effect during 1980 for these utility sources.

It is my understanding that your company provides utility
service in two of these counties. I would appreciate your
taking time to provide the following information on the
enclosed form :

- Electric rates that were in effect from Jan. 1-Dec. 31,
  1980. If more than one rate schedule was in effect
  during 1980, please list each schedule with the dates
  that they were in effect. A copy of each rate schedule
  would be helpful.
- Dates of peak/off-peak seasons. If your company has
  peak and off-peak rates, please indicate when the peak
  season is in effect (e.g., June-August).
- Monthly fuel adjustment costs. Please record these
  costs on the enclosed form. Also indicate how the
  adjustment is assessed, for example, $/KwH.

I appreciate your assistance and cooperation in collecting
and returning this information at your earliest convenience.

Sincerely,

Sandra Brubaker
Research Assistant
Housing, Interior Design and
    Consumer Studies

CENTENNIAL
DECADE
1980·1990

Please provide the following information for the utility rates charged by your company from Jan. 1 to Dec. 31, 1980.

NAME OF COMPANY _____

TYPE OF UTILITY PROVIDED _____

COUNTY/COUNTIES SERVED _____

UNIT OF MEASURING UTILITY (i.e., gallons, kwh) _____

1980 UTILITY RATES (Attach additional sheet if necessary)

_____

_____

_____

_____

DATES OF PEAK SEASON (If applicable)_____

FUEL ADJUSTMENT COSTS :

       JANUARY.... _____
       FEBRUARY... _____
       MARCH...... _____
       APRIL...... _____
       MAY........ _____
       JUNE....... _____
       JULY....... _____
       AUGUST..... _____
       SEPTEMBER.. _____
       OCTOBER.... _____
       NOVEMBER... _____
       DECEMBER... _____

****

RETURN TO :

      Sandra Brubaker
      Rm. 438 HEW
      Dept. HIDCS
      Oklahoma State University
      Stillwater, Oklahoma   74078

VITA ℒ

Sandra Elaine Brubaker

Candidate for the Degree of

Master of Science

Thesis: IMPACT OF UTILITY RATES UPON CONSUMER ATTITUDES
          TOWARD THE ENERGY CRISIS

Major Field: Housing, Interior Design and Consumer Studies

Biographical:

    Personal Data: Born in St. Augustine, Florida, August
          6, 1959, the daughter of Francis N. and Betty Jo
          Brubaker.

    Education: Graduated from St. Joseph Academy, St.
          Augustine, Florida, in May, 1977; received
          Bachelor of Science degree in Housing (Home and
          Family Life) from Florida State University in
          August, 1980; completed requirements for the
          Master of Science degree at Oklahoma State
          University in July, 1985.

    Professional Experience: Graduate Teaching and
          Research Assistant, Department of Housing,
          Interior Design and Consumer Studies, Oklahoma
          State University, August, 1984 to June, 1985;
          Social Science Analyst, U.S. Department of Agri-
          culture, June, 1984 to August, 1984; Graduate
          Teaching and Research Assistant, Department of
          Housing, Interior Design and Consumer Studies,
          Oklahoma State University, August, 1983 to June,
          1984; Research Assistant, Department of Home
          Economics, University of Arkansas at Pine Bluff,
          January, 1981 to August, 1983.

    Professional Organizations: American Association of
          Housing Educators, Phi Kappa Phi National Honor
          Society, Omicron Nu National Honor Society,
          American Home Economics Association.