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# **Availability of Alternate Petroleum Fuels to Offset Natural Gas Curtailments for the 1978-1979 Heating Season**

*(November 1-March 31)*

December 1978

**U.S. Department of Energy**  
Assistant Secretary for Economic  
Regulatory Administration  
Office of Fuels Regulation



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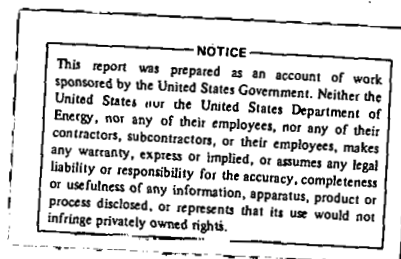
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## EXECUTIVE SUMMARY

This report of the availability of propane, middle distillates, and residual fuel oils, covering the role of these petroleum products both as primary and alternate fuels, indicates that the national supply/demand situation is favorable for the 1978-79 winter. Following is a summary by product type.

### PROPANE

Inventories, 89.9 million barrels on November 1, plus production and imports should be adequate to satisfy demand even if the 1978-79 winter is as severe as the 1976-77 winter. However, the effects of limitations of the propane distribution systems when combined with the distributive effects of storage and import facilities could result in localized short-term shortfalls in parts of the southeast, east central, and midwest areas similar to those occurring during the 1976-77 winter.

### MIDDLE DISTILLATES

The inventory level of middle distillate (heating oil) at the beginning of the 1978-79 heating season is reported to be about 19 percent below that at the start of the 1977-78 heating season and demand for the 1978-79 heating season (based on a normal winter) is anticipated to be about 2.5 to 4 percent higher than that for the 1977-78 heating season, and up 5 percent for a colder than normal winter. Nevertheless, it is

expected that colder than normal weather demand (including alternate fuel requirements resulting from natural gas curtailment) can be met by maintaining imports at 1976-77 levels and increasing production 4-5 percent above levels achieved in the 1976-77 heating season which was, by far, the coldest winter in recent years. The proposed increased production and import rates are well within the capability of the petroleum industry, U.S. and worldwide, respectively. Therefore, no shortages of heating oil due to a lack of supply are expected to occur in the 1978-79 heating season. However, shortfalls related to local distribution could recur if the 1978-79 winter is similar to 1976-77.

#### RESIDUAL FUEL OILS

The inventory level of residual fuel oil at the beginning of the 1978-79 heating season is reported to be about 15 percent below that at the start of the 1977-78 heating season, and demand for the 1978-79 heating season (based on a normal winter) is anticipated to be about 1.5 to 2.5 percent higher than that for the 1977-78 heating season and up about 5 percent for a colder than normal winter. Nevertheless, it is expected that the colder than normal weather demand (including alternate fuel requirements resulting from natural gas curtailment) can be met by maintaining the domestic production rates achieved in the past two heating seasons and by importing at the average rate of the 1976-77 heating season which was, by far, the coldest winter in recent years. The proposed production and import rates are well within the capability

of the petroleum industry, U.S. and worldwide, respectively. Therefore, no shortages of residual fuels due to a lack of supply are expected to occur in the 1978-79 heating season. However, local distribution related shortfalls could recur if the 1978-79 winter is similar to 1976-77.

## INTRODUCTION

This is a study of the availability of alternate petroleum fuels for the 1978-79 winter heating season (November 1 - March 31) and supplements a preliminary analysis submitted to the staff of the Federal Energy Regulatory Commission in August 1978. This study assesses the impact of projected natural gas curtailments as reported by natural gas transmission and distribution companies (EIA-50) on the overall supply/demand situation for alternate fuels and contains the Economic Regulatory Administration's (ERA) estimate of the ability of the petroleum industry to produce and import the fuels needed to meet curtailment and temperature-sensitive winter demand. These data show, by state, DOE Region and Petroleum Administration for Defense District (PADD), actual volumes of alternate energy sources used to offset natural gas shortfalls for the 1976-77 and 1977-78 winter heating seasons as well as the projected volumes of alternate fuels needed for the 1978-79 heating season to substitute for expected shortages of natural gas. In addition, the study provides data on the anticipated total demand for propane, distillate and residual fuel oils, the volumes required, and possible sources of supply to meet the projected demand for both a normal and colder than normal winter heating season in 1978-79.

The study has been prepared using a combination of trend analyses and forecasts based on current and past stock levels,



production, imports, and demand as derived from the EIA Mineral Industry Survey, the DOE/EIA Monthly Energy Review, the API Monthly Inventory Report, monthly reports to ERA by Prime Suppliers (Form EIA-25) and other sources.

Supplementary data on stocks, production, demand, imports and end use are provided by Exhibits 1 through 15. Tables 1 through 3 for each product contain supply, demand, and alternate fuel usage and delivery data by heating season. Heating season degree day information is contained in Exhibit 16. DOE National, DOE regional, and state responsibilities under the Mandatory Petroleum Allocation Program are outlined in Exhibit 17. Suggested steps for consumers needing alternate fuels in the event of natural gas curtailments are provided in Exhibit 18. Location of major LPG and product pipelines, storage facilities, and input terminals are shown on the U.S. maps provided in Exhibits 19 and 20. Exhibit 21 is a map of the Petroleum Administration for Defense Districts (PADDs) and Exhibit 22 is a U.S. map of Department of Energy Regions I through X.

#### OVERVIEW

The availability of propane, middle distillates, and residual fuel oils in any given area of the United States has traditionally been a function of total demand and supply as affected by localized weather conditions and the capacities of distribution and storage systems for the particular products.

In recent years, natural gas curtailments have also become a factor. During the 1974-75 and 1975-76 heating seasons, warmer weather, as related to the temperature-sensitive portion of demand for the various fuels, and variations in economic activity also affected the demand for fuels covered by this report. At the onset of the 1976-77 heating season, inventories for all products were at record high levels. However, due to severe weather and the resulting distribution problems, supply shortfalls occurred in many states east of the Mississippi River and in the upper midwest. These shortfalls resulted not from a lack of supply, but rather from increased localized demand that exceeded delivery capacities of transportation systems which were hampered by extreme weather conditions.

Severe weather also occurred during the 1977-78 winter heating season, but, unlike the prior winter, petroleum fuel shortages were isolated and of short duration. This was attributed primarily to lower alternate fuel demand and a more even distribution of cold weather across the entire heating season as compared to the 1976-77 winter heating season when abnormally cold weather prevented normal inventory buildups. Other ameliorating factors were increased supplies of natural gas, increases in capacities of distribution systems and storage facilities, and fuel conservation.

For the 1978-79 heating season, ERA expects adequate supplies of propane, middle distillates and residual fuel oils,

even though current levels of primary stocks of both middle distillates and residual fuels are below the levels anticipated in the preliminary report of August 1978. Continued high demand for motor gasoline during the summer months, requiring increases in production and imports of motor gasoline, along with continued high demand for distillates, has impacted on the buildup of primary stocks of distillates. The anticipated 1978-79 heating season demand for distillates most likely will require increased production and import rates for the coming winter.

ERA's current assessment of the availability of fuel supplies for the forthcoming winter is that no significant supply shortages will occur under either normal or cold winter assumptions based on the current ability of the petroleum industry to maintain high rates of production and imports. Isolated spot shortages could result, however, due to constraints of distribution systems, given a repetition of the prolonged, extreme temperatures experienced during the 1976-77 winter.

ANALYSIS OF THE AVAILABILITY OF  
PROPANE FOR THE 1978-79 HEATING SEASON

(NOVEMBER 1 - MARCH 31)

Propane,  $C_3H_8$ , a gas at normal temperature and atmospheric pressure, is stored and transported as a liquid under moderate pressures, and is one of a group of gases and liquids which are generally referred to as "natural gas liquids." It is a by-product of processing wet natural gas and refining crude oil.

Uses

Propane is used primarily for residential space heating, cooking, and water heating in rural areas (see Exhibit 5). Its second major use is as a petrochemical feedstock. Engine fuel and industrial use are third in significance. Small but significant quantities of propane are used in crop-drying and other agricultural uses.

Other uses include the process of manufacturing synthetic natural gas (SNG) and peak-shaving by gas distribution companies.

SUPPLY - NATIONAL

Total domestic production of propane peaked in 1972 at about 312 million barrels and declined steadily to a low of about 280 million barrels in 1976 (see Table A). This decline is attributed primarily to decreasing natural gas

production and, therefore, decreasing gas plant output. During 1977 a further decrease of 3 million barrels occurred at gas plants, but was offset by increased production at refineries of about 6 million barrels. During 1978, a further decrease of about 6 million barrels is projected at gas plants, which may be partially offset by increases at refineries of about 4 million barrels.

Despite declining production at gas plants, total supplies have been adequate due to constrained demand, a decline in use of propane as a petrochemical feedstock and increased imports. Tables A and B are a general summary of this balance between the declining supply and the constrained demand.

TABLE A

U.S. PROPANE SUPPLY 1971-77 a/  
AND ESTIMATED SUPPLY FOR 1978 b/  
(M Barrels)

| <u>Year</u> | <u>Natural Gas<br/>Processing Plants</u> | <u>Refineries</u> | <u>Production<br/>Subtotal</u> | <u>Imports</u> | <u>Total</u> |
|-------------|------------------------------------------|-------------------|--------------------------------|----------------|--------------|
| 1971        | 210,650                                  | 93,630            | 304,280                        | 11,600         | 315,880      |
| 1972        | 218,052                                  | 94,062            | 312,114                        | 15,085         | 327,199      |
| 1973        | 212,692                                  | 98,840            | 311,532                        | 25,614         | 337,146      |
| 1974        | 206,538                                  | 87,452            | 293,990                        | 21,464         | 315,454      |
| 1975        | 200,573                                  | 85,261            | 285,834                        | 22,058         | 307,892      |
| 1976        | 189,614                                  | 90,693            | 280,307                        | 24,768         | 305,075      |
| 1977        | 186,157                                  | 96,848            | 283,005                        | 31,427         | 314,432      |
| 1978 b/     | 180,000                                  | 101,000           | 281,000                        | 20,000         | 301,000      |

a/ Source: EIA/BOM

b/ ERA estimates

TABLE B

DOMESTIC PROPANE DEMAND  
(M Barrels)

| <u>Year</u> | <u>% Change From Prior Year</u> | <u>Domestic Demand</u> a/ |
|-------------|---------------------------------|---------------------------|
| 1971        | ---                             | 289,718                   |
| 1972        | + 12.8%                         | 326,816                   |
| 1973        | - 2.6%                          | 318,196                   |
| 1974        | - 4.8%                          | 303,061                   |
| 1975        | - 5.7%                          | 285,877                   |
| 1976        | + 6.3%                          | 303,846                   |
| 1977        | - 1.2%                          | 300,333                   |

a/ Source: EIA/BOM

REVIEW OF LOGISTICS SYSTEMS FOR EACH  
REGION AS RELATED TO POSSIBLE  
PROPANE SUPPLY SHORTAGES

Introduction

Since the 1973-74 heating season, total supplies of propane have exceeded the constrained demand. Ending inventories during the last five heating seasons have been in the 51 to 69 million barrel range. Closing inventories for the 1978-79 winter are estimated to be between 49 and 65 million barrels, depending on weather conditions and related alternate fuel demand (see Table P-1). Thus, supply is expected to be adequate to meet all anticipated demands during the 1978-79 heating season. However, propane shortages, such as occurred during the 1976-77 heating season, could recur but would be attributed to limitations in distribution systems rather than lack of supply. Any significant shortages during the 1978-79 heating season would probably stem from these same limitations.

More than 90% of the interstate shipments of propane are transported by pipelines. (See Exhibit 19 for LPG pipeline map.) Rail cars and motor carriers alone are responsible for less than 9% of shipments, and barges carry less than 1%.

The ability of rail cars and motor carriers to augment pipeline shipments during periods of peak demand is minimal because few tank cars have been available during past winters due to long term leasing arrangements, and long distance movement by motor carrier is not economical. Suppliers and users of propane, therefore, have traditionally filled their storage at the point of use in the summer months for anticipated drawdowns during winter months.

Most storage facilities are located in the states of Louisiana, Texas, Oklahoma, and Kansas. These are near sources of production and import facilities and consist of large underground caverns. Storage of propane in steel tanks above ground in other areas of the country is very expensive and therefore not generally used to store large volumes for possible use in event of extreme winter weather.

The highest recorded delivery volumes, many occurring in the 1976-77 winter, may be used as a rough approximation of capabilities of distribution systems. Moderate increases are possible, however, on some pipeline systems due to completion of expansion programs since the 1976-77 winter.

In the following review of regional logistics systems, deliveries for the 1976-77 winter are used for analysis purposes, since demand in the 1976-77 winter was 17 million barrels higher than for the 1977-78 winter and also the highest in the last five.



## PROPANE

### REGIONAL SUPPLY/DEMAND ASSESSMENT

#### Region I.

Region I, comprising the New England States, has major storage facilities of approximately 3.3 million barrels and historical heating season deliveries of approximately 4.8 million barrels. This is a fairly favorable relationship. The region has import terminals at Everett, Massachusetts; Portsmouth, New Hampshire; and Providence, Rhode Island. These terminals are in close proximity to the major population/demand centers in the region. There are no LPG pipeline terminals in the region. However, the southwestern area of the region is served by tank trucks pulling out of Texas Eastern Pipeline's Selkirk, N.Y. terminal, and tank cars are also loaded there for other destinations in the region. No major supply problems have occurred during the two past severe winters. A few isolated spot shortages have occurred, however, due to weather conditions that delayed normal deliveries over secondary highways to end users. No significant distribution-related shortages are expected for this region.

#### Region II.

Region II includes the States of New York and New Jersey and has bulk storage nearly equalling deliveries during the 1976-77 heating season. Imports are available through terminals located in New England and near Philadelphia, Pennsylvania. The region is served by the Texas Eastern Pipeline with a maximum daily through-put capacity of 50,000

barrels per day. The total logistics systems are considered adequate to meet periods of peak demand and, in fact, have experienced few problems during the past two winters. Some temporary isolated spot shortages occurred, due to adverse highway conditions which disrupted normal tank truck deliveries. The primary distribution system is well configured to meet periods of peak demand in this region, and no major distribution-related problems are expected.

### Region III

This region is composed of the Mid-Atlantic States of Pennsylvania, Delaware, Maryland, Virginia, and West Virginia. The relationship of storage to deliveries is low with about 2 million barrels of storage and almost 7 million barrels of deliveries during the 1976-77 winter heating season. Import terminals are located near Philadelphia, Pennsylvania, and Norfolk, Virginia. The Texas Eastern Pipeline has three terminals in Pennsylvania with a through-put capacity of 40,000 barrels per day or 7.2 million barrels during the entire heating season as compared with actual deliveries of nearly 7 million barrels. During periods of peak demand due to extreme weather conditions the pipeline was on allocation. Because total deliveries nearly equalled total pipeline capacity compared with a relatively small storage capacity, shortfalls occurred in this region during the 1976-77 heating season. Although the pipeline capacity was slightly increased during 1977, intense demand such as occurred during 1976-77 could again exceed pipeline capacity for Region III with resultant supply shortfalls.

#### Region IV.

This region encompasses the southeastern states with exception of Louisiana and Arkansas. Of all the regions, this one has been the most susceptible to supply shortfalls due to delivery system constraints. Storage in this region is very limited with 80% of storage capacity in Mississippi. The one small import terminal which serves the Region is near Miami, Florida, which is not a central location. The States of North and South Carolina, Georgia, Alabama, and Mississippi, are served by the Dixie Pipeline with a maximum delivery capacity of 120,000 barrels per day. A substantial portion of this volume is taken by Alabama and Mississippi, states not usually experiencing heavy demand during cold weather. The remaining capacity available to serve the Carolinas and Georgia is therefore quite limited. No pipeline service is available to Kentucky and Tennessee. Because the Dixie Pipeline has been unable to transport total required volumes, suppliers have for several years been placed on allocation during periods of peak demand. Although some increases in through-put capacity were made prior to the 1977-78 heating season, the Dixie Pipeline was unable to transport quantities of propane sufficient to meet total demand. Despite plans for further increases on the Dixie Pipeline for the 1978-79 heating season, high weather-generated demand may again exceed pipeline capacity with potential supply shortfalls in the Carolinas, Tennessee, and Kentucky.

#### Region V.

Region V includes, Ohio, Indiana, Illinois, Michigan, Wisconsin, and Minnesota. No import terminals serve this region and the storage to delivery ratio (1 to 3) is not especially favorable.

However, as shown by the LPG pipeline map (Exhibit 19), population areas are serviced by a network of five major pipelines. During the 1977-78 winter heating season these pipelines were able to transport all required volumes of propane, and significant additional volumes could have been handled if required. Therefore, due to adequate capacities on pipelines serving Region V, no supply shortfalls attributable to distribution constraints are expected, except in the case of extreme weather such as occurred in the 1976-77 heating season.

#### Region VI.

Region VI consists of the States of Texas, New Mexico, Oklahoma, Arkansas, and Louisiana. This region is the heart of the American petroleum industry for production, storage, imports, and transportation. No distribution-related shortfalls are expected to occur in this region.

#### Region VII.

This region, includes the States of Nebraska, Iowa, Kansas, and Missouri. Storage in this region exceeds deliveries, because storage facilities in Kansas rank among the largest

in the United States. Five major pipeline systems traverse this region. As this region is in the center of the national storage and pipeline systems, no supply shortages are expected due to logistical constraints.

#### Region VIII.

The States of Colorado, Utah, Wyoming, Montana, and the Dakotas are in this region. More than half the deliveries were within the State of Colorado which is served by the Phillips Pipeline with a daily capacity of 58,000 barrels. This capacity is about three times the demand for Colorado. Adjacent states have low demand and have been adequately supplied by rail car. For these reasons no significant shortages have been experienced in this region during the last two winters, and none are expected in the future.

#### Region IX.

This region contains the States of Arizona, Nevada, California, and Hawaii. Over 80% of the deliveries are made within the State of California. California has approximately 50 refineries of which 20 are considered major. These refineries as sources of supply - are therefore located in close proximity to major propane markets. In addition, a large propane import terminal is located at Los Angeles. The temperate climate in most of this region precludes peak surges in demand. Rail car transportation is adequate to supply small volumes of propane required by New Mexico and Arizona. For these reasons no supply problems are expected in Region IX.

Region X.

This region includes the States of Idaho, Oregon, Washington, and Alaska. An import terminal is located at Ferndale, Washington. Very small volumes of propane are used in this region, and no problems have occurred in the last two winters. No supply problems are expected during future winters.

## PROPANE

### GEOGRAPHICAL SUPPLY/DEMAND ASSESSMENT

PADD I, comprising the New England, central Atlantic, and lower Atlantic states, accounted for approximately 20% of the total U.S. propane demand in the 1977-78 heating season (November 1 - March 31). Of the total PADD I demand of about 8,924,000 gallons per day, some 17%, equaling about 1,494,000 gallons per day, was used as alternate fuel.

Seasonal heating degree days experienced in PADD I, which were 16.2% colder than normal in 1976-77 and 8.5% colder than normal in 1977-78, about equalled the corresponding national percentages of 15.1% in 1976-77 and 8.4% in 1977-78. Projected total increased national propane demand, for a colder than normal winter, is estimated at only 5% greater than demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season in the tables indicates a projected 3% decrease in propane demand for alternate fuel usage over actual reported usage for 1977-78 in PADD I. On a state by state basis, the 1978-79 projected demand for propane as an alternate fuel appears manageable since the requirement for each of the 18 states in PADD I except Florida, New York, and New Jersey is less than than the 1977-78 winter. For these same states the requirement is well below the 1976-77 winter.

PADD II, comprising fifteen states in the midwest (including all of Regions V and VII plus Kentucky, Oklahoma, North Dakota, South Dakota, and Tennessee) accounted for approximately 44% of the total U.S. propane demand in the 1977-78 heating season (November 1 - March 31). Of the total PADD II demand of 19,308,000 gallons per day, some 10%, equaling 1,838,000 gallons per day, was used as alternate fuel.

Heating season degree days experienced in PADD II were 17.6% colder than normal in 1976-77 and 16.0% colder than normal in 1977-78 which about equalled the corresponding national percentage of 15.1% in 1976-77 and exceeded the corresponding national percentage of 8.4% colder than normal in 1977-78. Anticipated increased national propane demand for a colder than normal winter is projected to be about 5% greater than demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown in the tables indicates a 30% projected decrease in propane demand as an alternate fuel over actual usage reported for 1977-78 in PADD II. The 1978-79 projected demand, by state, for use of propane as an alternate fuel does not appear to present a problem since the requirement is less for each of the 15 states in PADD II than for the winter of 1977-78, except South Dakota, Tennessee, and Wisconsin, which are less than for the winter of 1976-77.



PADD III, comprising all states bordering on the gulf coast except Florida as well as Arkansas and New Mexico, accounted for approximately 30% of the total U.S. propane demand in the 1977-78 heating season November 1 - March 31). Of the total PADD III demand of 13,020,000 gallons per day, some 2% was used as alternate fuel equal to 220,000 gallons per day.

Seasonal heating degree days experienced in PADD III were 32.8% colder than normal in 1976-77 and 41.9% colder than normal in 1977-78 and were much colder than the corresponding national percentages of 15.1% in 1976-77 and 8.4% in 1977-78. Anticipated propane demand for a colder than normal winter is projected to be no greater than demand in the past two heating seasons.

Analysis of alternate fuel usage data for the heating season as shown in the tables indicates no significant projected increase in propane demand as an alternate fuel over actual usage reported for 1977-78 in PADD III. The 1978-79 projected demand, by state, for use of propane as an alternate fuel appears to be favorable since the requirement for Arkansas and Louisiana is less than for the 1977-78 winter, the requirement for New Mexico is small, and the requirement for Alabama, Mississippi, and Texas is less than for the 1976-77 winter.

PADD IV, comprising the Rocky Mountain states, accounted for approximately 3% of the total U.S. propane demand in the 1977-78 heating season (November 1 - March 31). Of the total PADD IV demand of 1,139,000 gallons per day, some 12%, equal to 133,000 gallons per day, was used as alternate fuel.

Heating season degree days experienced in PADD IV were about normal in 1976-77 and warmer than normal in 1977-78.

Analysis of alternate fuel usage data for the heating season as shown in the tables indicates a 15% projected increase in propane demand as an alternate fuel over actual usage reported for 1977-78 in PADD IV. The projected increase in 1978-79 alternate fuel demand is only 20,000 gallons per day and should not result in any significant supply problems. The 1978-79 projected demand, by state, for use of propane as an alternate fuel appears to be favorable since the maximum increased requirement for any one of the 5 states is only 7,000 gallons per day over the 1977-78 winter.

PADD V, comprising the west coast states, Nevada, and Arizona, accounted for approximately 3% of the total U.S. propane demand in the 1977-78 heating season (November 1 - March 31). Of the total PADD V demand of 1,501,000 gallons per day, some 1%, equal to 9,000 gallons per day, was used as alternate fuel.

Heating season degree days experienced in PADD V were 12.4% warmer than normal in 1976-77 and 36.0% warmer than normal in 1977-78.

Analysis of alternate fuel usage data for the heating season as shown in the tables indicates 400% projected increase in propane demand as an alternate fuel over actual usage reported for 1977-78 in PADD V. However, the projected increase in 1978-79 alternate fuel demand is only 36,000 gallons per day and should not result in any significant supply problems. The 1978-79 projected demand, by state, for use of propane as an alternate fuel appears to be favorable since California's requirement, accounting for 22,000 of the PADD's 36,000 projected increase, is only 18% of its 1976-77 winter usage.

NATIONAL SUPPLY AND DEMAND FOR PROPANE  
BY HEATING SEASON

The following Table P-1 shows the actual supply and demand for propane during the last four heating seasons and the projected supply and demand for the 1978-79 heating season for both a normal and colder than normal season. The table shows that the demand may be met by a drawdown of inventory plus production and imports. Although gas plant production has been declining since 1972 as shown in Table A, there is less than 1% projected decline overall since an even larger refining production increase is expected for the heating season than is shown in Table A. With primary inventories at a reasonably high level and with declining demand projected for a normal winter, imports may correspondingly decline about 46% for the 1978-79 heating season. Our review indicates that inventories should be adequate to meet even the larger demand projected for a colder than normal winter.

TABLE P-1  
U.S. SUPPLY AND DEMAND BY HEATING SEASON  
FOR PROPANE  
MBBL

|                          | <u>PROJECTED 1/</u> |         | <u>ACTUAL 2/</u> |         |         |         |
|--------------------------|---------------------|---------|------------------|---------|---------|---------|
|                          | 1978-79<br>COLDER   | NORMAL  | 1977-78          | 1976-77 | 1975-76 | 1974-75 |
| Primary Stocks Inventory |                     |         |                  |         |         |         |
| Inventory: Nov. 1        | 89,949              | 89,949  | 88,345           | 93,441  | 88,392  | 79,911  |
| March 31                 | 48,932              | 64,933  | 61,471           | 51,467  | 68,967  | 56,756  |
| Net Drawdown             | 41,017              | 25,016  | 26,874           | 41,974  | 19,425  | 23,155  |
| (MBD)                    | (272)               | (166)   | (178)            | (278)   | (128)   | (153)   |
| Production Total         | 118,614             | 118,614 | 119,069          | 117,272 | 119,795 | 120,108 |
| (MBD)                    | (786)               | (786)   | (789)            | (777)   | (788)   | (795)   |
| Imports Total            | 7,223               | 7,223   | 13,312           | 18,284  | 10,959  | 10,733  |
| (MBD)                    | (48)                | (48)    | (88)             | (121)   | (72)    | (71)    |
| Demand Total             | 166,854             | 150,853 | 159,255          | 177,530 | 150,179 | 150,996 |
| (MBD)                    | (1,105)             | (999)   | (1,055)          | (1,176) | (988)   | (1,000) |

Data Source:

1/ ERA Estimate

2/ EIA

TABLE P-2  
PROPANE USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
(THOUSANDS OF GALLONS PER DAY)

|                |     | ALTERNATE FUEL USAGE <u>1/</u> |        |           |        | TOTAL DELIVERIES <u>2/</u> |           |          |               |                  |
|----------------|-----|--------------------------------|--------|-----------|--------|----------------------------|-----------|----------|---------------|------------------|
|                |     | 1976-77                        |        | 1977-78   |        | 1978-79                    |           | 1976-77  |               | 1977-78          |
|                |     | Projected                      | Actual | Projected | Actual | Projected                  | Inc/Act.* | All Uses | Alt. Fuels ** | % Alt. Fuels *** |
| PADD           | I   | 1070                           | 2264   | 1542      | 1492   | 1452                       | (3%)      | 9926     | 23%           | 8924 17%         |
|                | II  | 1862                           | 3343   | 2446      | 1749   | 1374                       | (21%)     | 20396    | 16%           | 19308 9%         |
|                | III | 173                            | 322    | 329       | 202    | 221                        | 9%        | 16064    | 2%            | 13020 2%         |
|                | IV  | 109                            | 33     | 32        | 15     | 24                         | 60%       | 1157     | 3%            | 1138 1%          |
|                | V   | 783                            | 201    | 735       | 10     | 45                         | 350%      | 1591     | 13%           | 1502 1%          |
| NATIONAL TOTAL |     | 3997                           | 6163   | 5084      | 3468   | 3116                       | (10%)     | 49134    | 13%           | 43892 8%         |
| REGION         |     |                                |        |           |        |                            |           |          |               |                  |
| I              |     | 4                              | 1      | 0         | 0      | 0                          | 0         | 1333     | 0             | 1069 0           |
| II             |     | 64                             | 265    | 174       | 112    | 147                        | 31%       | 1424     | 19%           | 1223 9%          |
| III            |     | 370                            | 558    | 332       | 161    | 132                        | (18%)     | 1884     | 30%           | 1816 9%          |
| IV             |     | 932                            | 2053   | 1609      | 1485   | 1493                       | 1%        | 9086     | 23%           | 8230 18%         |
| V              |     | 1054                           | 1961   | 1312      | 778    | 693                        | (11%)     | 8881     | 22%           | 8027 10%         |
| VI             |     | 33                             | 101    | 42        | 73     | 41                         | (44%)     | 15293    | 1%            | 12671 1%         |
| VII            |     | 646                            | 958    | 821       | 818    | 525                        | (36%)     | 7718     | 12%           | 7458 11%         |
| VIII           |     | 111                            | 65     | 59        | 31     | 40                         | 29%       | 1838     | 4%            | 1828 2%          |
| IX             |     | 684                            | 141    | 683       | 7      | 27                         | 286%      | 1263     | 11%           | 1220 1%          |
| X              |     | 99                             | 60     | 52        | 3      | 18                         | 500%      | 414      | 14%           | 350 1%           |
| NATIONAL TOTAL |     | 3997                           | 6163   | 5084      | 3468   | 3116                       | (10%)     | 49134    | 13%           | 43892 8%         |

\* Percentage increase or (decrease) of Projected 1978-79 Alternate Fuel Usage over 1977-78 Actual Alternate Fuel Usage

\*\* 1976-77 Actual Alternate Fuel Usage over Total Deliveries for all uses same year

\*\*\* 1977-78 Actual Alternate Fuel Usage over Total Deliveries for all uses same year

Data Source: 1/ Alternate Fuel Demand EIA-50

2/ Prime Supplier Monthly Report EIA-25

TABLE P-3  
PROPANE USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
 (THOUSANDS OF GALLONS PER DAY)

|                   | 1976-77   |        | ALTERNATE FUEL USAGE 1/<br>1977-78 |        | 1978-79<br>% |           | 1975-77<br>All Uses | TOTAL DELIVERIES 2/<br>1977-78 |          |                     |
|-------------------|-----------|--------|------------------------------------|--------|--------------|-----------|---------------------|--------------------------------|----------|---------------------|
|                   | Projected | Actual | Projected                          | Actual | Projected    | Inc/Act.* |                     | % Alt. **<br>Fuels             | All Uses | % Alt. ***<br>Fuels |
| Total U.S. STATES | 3,999     | 6,163  | 5,084                              | 3,468  | 3,116        | (10%)     | 49,134              | 13%                            | 43,892   | 8%                  |
| ALABAMA           | 68        | 194    | 204                                | 101    | 126          | 25%       | 1,192               | 16%                            | 1,006    | 10%                 |
| ALASKA            | 0         | 0      | 0                                  | 0      | 0            | 0         | 11                  | 0                              | 14       | 0                   |
| ARIZONA           | 11        | 7      | 24                                 | 5      | 3            | (40%)     | 138                 | 5%                             | 93       | 5%                  |
| ARKANSAS          | 4         | 24     | 18                                 | 14     | 11           | (21%)     | 1,099               | 2%                             | 933      | 2%                  |
| CALIFORNIA        | 673       | 134    | 659                                | 2      | 24           | 1,100%    | 1,003               | 13%                            | 1,022    | 0                   |
| COLORADO          | 49        | 9      | 13                                 | 5      | 8            | 60%       | 440                 | 2%                             | 429      | 1%                  |
| CONNECTICUT       | 0         | 0      | 0                                  | 0      | 0            | 0         | 204                 | 0                              | 194      | 0                   |
| DELAWARE          | 11        | 12     | 3                                  | 2      | 2            | 0         | 183                 | 7%                             | 176      | 1%                  |
| D.C.              | 0         | 0      | 0                                  | 0      | 0            | 0         | 0                   | 0                              | 0        | 0                   |
| FLORIDA           | 62        | 109    | 34                                 | 28     | 42           | 50%       | 1,531               | 7%                             | 1,479    | 2%                  |
| GEORGIA           | 173       | 503    | 291                                | 362    | 357          | (1%)      | 1,684               | 30%                            | 1,545    | 23%                 |
| HAWAII            | 0         | 0      | 0                                  | 0      | 0            | 0         | 52                  | 0                              | 62       | 0                   |
| IDAHO             | 0         | 0      | 0                                  | 0      | 0            | 0         | 86                  | 0                              | 68       | 0                   |
| ILLINOIS          | 454       | 343    | 381                                | 232    | 176          | (24%)     | 2,238               | 15%                            | 2,166    | 11%                 |
| INDIANA           | 150       | 169    | 142                                | 82     | 27           | (67%)     | 1,508               | 11%                            | 1,358    | 6%                  |
| IOWA              | 81        | 328    | 344                                | 157    | 159          | 1%        | 1,860               | 18%                            | 2,007    | 8%                  |
| KANSAS            | 301       | 377    | 215                                | 416    | 144          | (65%)     | 2,931               | 13%                            | 2,609    | 16%                 |
| KENTUCKY          | 67        | 179    | 70                                 | 56     | 32           | (43%)     | 810                 | 22%                            | 823      | 7%                  |
| LOUISIANA         | 0         | 6      | 7                                  | 41     | 12           | (71%)     | 2,688               | 0                              | 2,189    | 2%                  |
| MAINE             | -         | 0      | 0                                  | 0      | 0            | 0         | 115                 | 0                              | 102      | 0                   |
| MARYLAND          | 78        | 59     | 78                                 | 27     | 22           | (19%)     | 323                 | 18%                            | 296      | 9%                  |
| MASSACHUSETTS     | 0         | 0      | 0                                  | 0      | 0            | 0         | 696                 | 0                              | 458      | 0                   |
| MICHIGAN          | 71        | 45     | 55                                 | 25     | 19           | (24%)     | 1,080               | 4%                             | 976      | 3%                  |
| MINNESOTA         | 67        | 407    | 417                                | 254    | 340          | 34%       | 1,441               | 28%                            | 1,392    | 18%                 |

\* Percentage increase or (decrease) of Projected 1978-79 Alternate Fuel Usage over 1977-78 Actual Alternate Fuel Usage

\*\* 1976-77 Actual Alternate Fuel Usage over Total Deliveries for all uses same year

\*\*\* 1977-78, Actual Alternate Fuel Usage over Total Deliveries for all uses same year

Data Source: 1/ Alternate Fuel Demand EIA-50  
 2/ Prime Supplier Monthly Report EIA-25

TABLE P-3  
PROPANE USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
(THOUSANDS OF GALLONS PER DAY)

|               | 1976-77   |        | ALTERNATE FUEL USAGE <sup>1/</sup><br>1977-78 |        | 1978-79   |                | 1976-77<br>All Uses | TOTAL DELIVERIES <sup>2/</sup><br>1977-78 |          |                   |
|---------------|-----------|--------|-----------------------------------------------|--------|-----------|----------------|---------------------|-------------------------------------------|----------|-------------------|
|               | Projected | Actual | Projected                                     | Actual | Projected | %<br>Inc/Act.* |                     | % Alt. **<br>Fuels                        | All Uses | Alt. ***<br>Fuels |
| MISSISSIPPI   | 77        | 68     | 88                                            | 36     | 59        | 64%            | 1,040               | 7%                                        | 920      | 4%                |
| MISSOURI      | 182       | 177    | 183                                           | 152    | 124       | (18%)          | 2,130               | 8%                                        | 2,025    | 8%                |
| MONTANA       | 0         | 0      | 0                                             | 0      | 0         | 0              | 190                 | 0                                         | 153      | 0                 |
| NEERASKA      | 82        | 76     | 75                                            | 93     | 98        | 5%             | 797                 | 10%                                       | 818      | 11%               |
| NEVADA        | 0         | 0      | 0                                             | 0      | 0         | 0              | 70                  | 0                                         | 42       | 0                 |
| NEW HAMPSHIRE | 0         | 1      | 0                                             | 0      | 0         | 0              | 158                 | 1%                                        | 170      | 0                 |
| NEW JERSEY    | 49        | 145    | 112                                           | 76     | 101       | 33%            | 601                 | 24%                                       | 536      | 14%               |
| NEW MEXICO    | 3         | 0      | 0                                             | 0      | 1         | (N/A)          | 268                 | 0                                         | 232      | 0                 |
| NEW YORK      | 15        | 120    | 62                                            | 36     | 46        | 28%            | 823                 | 15%                                       | 687      | 5%                |
| N. CAROLINA   | 232       | 485    | 388                                           | 376    | 350       | (7%)           | 1,188               | 41%                                       | 1,076    | 35%               |
| NORTH DAKOTA  | 0         | 9      | 8                                             | 5      | 5         | 0              | 390                 | 2%                                        | 395      | 1%                |
| OHIO          | 285       | 770    | 227                                           | 107    | 27        | (75%)          | 1,324               | 58%                                       | 980      | 11%               |
| OKLAHOMA      | 5         | 41     | 5                                             | 8      | 5         | (38%)          | 1,461               | 3%                                        | 1,577    | 1%                |
| OREGON        | 53        | 42     | 37                                            | 3      | 18        | 500%           | 100                 | 42%                                       | 75       | 4%                |
| PENNSYLVANIA  | 217       | 364    | 186                                           | 86     | 70        | (19%)          | 777                 | 47%                                       | 795      | 11%               |
| RHODE ISLAND  | 4         | 0      | 0                                             | 0      | 0         | 0              | 66                  | 0                                         | 47       | 0                 |
| S. CAROLINA   | 161       | 343    | 323                                           | 453    | 424       | (6%)           | 882                 | 39%                                       | 715      | 63%               |
| SOUTH DAKOTA  | 2         | 23     | 22                                            | 11     | 11        | 0              | 377                 | 6%                                        | 363      | 3%                |
| TENNESSEE     | 88        | 172    | 211                                           | 73     | 103       | 41%            | 759                 | 23%                                       | 665      | 11%               |
| TEXAS         | 21        | 30     | 12                                            | 10     | 12        | 20%            | 9,777               | 0                                         | 7,740    | 0                 |
| UTAH          | 56        | 23     | 16                                            | 10     | 16        | 60%            | 140                 | 16%                                       | 183      | 5%                |
| VERMONT       | 0         | 0      | 0                                             | 0      | 0         | 0              | 94                  | 0                                         | 99       | 0                 |
| VIRGINIA      | 26        | 78     | 58                                            | 43     | 35        | (19%)          | 483                 | 16%                                       | 429      | 10%               |
| WASHINGTON    | 46        | 18     | 15                                            | 0      | 0         | 0              | 217                 | 8%                                        | 193      | 0                 |
| WEST VIRGINIA | 38        | 45     | 7                                             | 3      | 3         | 0              | 118                 | 38%                                       | 118      | 3%                |
| WISCONSIN     | 27        | 227    | 90                                            | 78     | 104       | 33%            | 1,290               | 18%                                       | 1,156    | 7%                |
| WYOMING       | 5         | 1      | 0                                             | 0      | 0         | 0              | 301                 | 0                                         | 306      | 0                 |

\* Percentage increase or (decrease) of Projected 1978-79 Alternate Fuel Usage over 1977-78 Actual Alternate Fuel Usage

\*\* 1976-77 Actual Alternate Fuel Usage over Total Deliveries for all uses same year

\*\*\* 1977-78 Actual Alternate Fuel Usage over Total Deliveries for all uses same year

Data Source: <sup>1/</sup> Alternate Fuel Demand EIA-50

<sup>2/</sup> Prime Supplier Monthly Report EIA-25



An Analysis of the Availability of Middle  
Distillates for the 1978-79 Heating Season  
(November 1 - March 31)

"Middle distillates" (distillates) include petroleum products identified as kerosene, diesel fuels, and fuel oils which may be referred to as No. 2 home heating oil, range oil, stove oil, etc. Specifically excluded from this definition in this report are kerosene-base and naphtha-base jet fuel, heavy fuel oils which are referred to as No. 4, No. 5, and No. 6, and intermediate fuel oils which are blends containing No. 6 oil.

Uses

Distillates are used primarily in the winter heating season for residential space heating in the northeastern and north central states. The second major use of distillates is as a diesel fuel for on-highway, off-highway, railroad and water transportation uses. Industrial applications and electric utility use are third in significance. (Sales of Distillate Fuel Oil by Use - Exhibit No. 10.) Historical sources of middle distillate supply data do not identify No. 2 oil specifically for space heating use. Some suppliers have a single product for use as No. 2 heating oil and No. 2 diesel fuel which are interchangeable; therefore, this heating season analysis is based on total distillate supply/demand with the assumption that the historical non-space heating

uses, other than alternate fuel use for natural gas curtailments, are predictable by reference to historical growth rates.

#### Supply - National

Due to the colder weather experienced in the winters of 1977-78 (8.4% colder than normal) and 1976-77 (15% colder than normal) as shown in Exhibit No. 16, Heating Season Degree Day Information, actual average demand for distillates for the past two heating seasons was up about 20% over the close to normal winter of 1975-76. To meet the higher demand of the past two heating seasons, average domestic production was up about 15% over the average for the 1975-76 heating season, and the average rate of imports for the same period was up 86%. The inventory level at the beginning of the 1977-78 heating season (November 1) was about 16% higher than the average of the two previous years which permitted a higher than average stock drawdown (858 MBD) in the 1977-78 heating season. The stock drawdown of 858 MBD provided 20% of the total U.S. distillate demand of 4192 MBD in the 1977-78 heating season; average production of 3134 MBD provided 75%, and imports of 200 MBD provided 5% of the total demand.

As shown on Table D-1, it is reported that for the 1978-79 heating season, the beginning inventory level is about 19% below the 1977-78 heating season level which, when

compared with previous heating seasons, will permit a lower drawdown of stocks (577 MBD) than last winter without jeopardizing the overall inventory position. It is anticipated that 1978-79 heating season demand will be about 3% above the 1977-78 heating season for a normal winter and up about 5% for a colder than normal winter. This cold weather demand, including alternate fuel requirements for natural gas curtailment, as projected in Figures D-2 and D-3, could be met by increasing production about 4-5%, and imports to levels achieved in the 1976-77 heating season which was, by far, the coldest winter in recent years. The proposed increased production and import rates are well within the capability of the petroleum industry, U.S. and worldwide, respectively; therefore, no shortages of distillate due to lack of total supply are expected to occur in the 1978-79 heating season.

Geographical Supply/Demand Assessment  
PADD I

PADD I, comprising the New England, central Atlantic, and lower Atlantic states, accounted for approximately 47% of the total U.S. distillate demand in the 1977-78 heating season. Of the total demand in PADD I, 23% was met by stock drawdown, 67% by domestic production, and 10% by imports of distillates. PADD I production of distillates accounted for 41% of total U.S. production, and imports were 95% of the total U.S. imports for the heating season. PADD I's dependency

on imports is concentrated in New England and the central Atlantic districts in which the combined usage was 100% of the total imports into PADD I in the 1977-78 heating season. Increased demand in the New England and central Atlantic states, therefore, will most likely be met by imports.

Heating season degree days experienced in PADD I were 16.2% colder than normal in 1976-77 and 8.5% colder than normal in 1977-78 and about equalled the corresponding national averages of 15.1% in 1976-77 and 8.4% in 1977-78. PADD I distillate demand in 1978-79 for a colder than normal winter is projected to be about 5% greater than actual demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables D-2 and D-3 projects a 4% increase in distillate demand as an alternate fuel over actual usage reported for 1977-78 in PADD I. Distillate usage as an alternate fuel was 4% of the total distillate delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of distillates as an alternate fuel appears to be manageable since the projected requirement does not exceed the maximum alternate fuel usage reported in any state in PADD I for the past two heating seasons.

#### PADD II

PADD II, comprising fifteen states in the upper midwest,

accounted for approximately 30% of the total U.S. distillate demand in the 1977-78 heating season. Of the demand, 18% was met by stock drawdown and 82% was met by domestic production which was 36% of total U.S. production of distillates. Imports used in PADD II are negligible.

Heating season degree days experienced in PADD II were 17.6% colder than normal in 1976-77 and 16.0% colder than normal in 1977-78 and about equalled the national averages of 15.1% in 1976-77, but were 7.6% colder than the 1977-78 national average. PADD II distillate demand in 1978-79 for a colder than normal winter is projected to be about 5% greater than actual demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables D-2 and D-3 projects an 11% increase in distillate demand as an alternate fuel over actual usage reported for 1977-78 in PADD II. Distillate usage as an alternate fuel was 10% of the total distillate delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of distillates as an alternate fuel appears to be manageable since the projected requirement does not exceed the maximum alternate fuel usage reported in any state in PADD II for the past two heating seasons.

### PADD III

PADD III, comprising states bordering on the gulf coast, except Florida, plus Arkansas and New Mexico, accounted for

approximately 12% of the total U.S. distillate demand in the 1977-78 heating season. Of the total demand, 35% was met by stock drawdown, and 65% was met by domestic production which accounted for 10% of total U.S. production of distillates. Imports in PADD III are negligible.

Heating season degree days experienced in PADD III were 32.8% colder than normal in 1976-77 and 41.9% colder than normal in 1977-78 and were much colder than the corresponding national averages of 15.1% in 1976-77 and 8.4% in 1977-78. Distillate demand for a colder than normal 1978-79 winter is projected to be no greater than maximum demand in the past two heating seasons.

Analysis of alternate fuel usage data for the heating season as shown on Tables D-2 and D-3 projects a 12% increase in distillate demand as an alternate fuel over actual usage reported for 1977-78 in PADD III. Distillate usage as an alternate fuel was 8% of the total distillate delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of distillates as an alternate fuel appears to be manageable since the projected requirement does not exceed the maximum alternate fuel usage reported in any state in PADD III for the past two heating seasons.

#### PADD IV

PADD IV, comprising the Rocky Mountain states, accounted for approximately 3% of the total U.S. distillate demand in

the 1977-78 heating season. The total demand met by stock drawdown and by imports of distillates was negligible in PADD IV with almost 100% of the demand being met by domestic production which accounted for 4% of total U.S. production of distillates. PADD IV's dependency on pipeline movement of production is such that extended transportation delays could create localized supply problems.

Heating season degree days experienced in PADD IV were about normal in 1976-77 and warmer than normal in 1977-78. Anticipated increased distillate demand in 1978-79 for a colder than normal winter, therefore, is projected to be about 5% greater than demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables D-2 and D-3 projects a 38% increase in distillate demand as an alternate fuel over actual usage reported for 1977-78 in PADD IV. Distillate usage as an alternate fuel was 2% of the total distillate delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of distillates as an alternate fuel appears to be manageable since the projected requirement does not exceed the maximum alternate fuel usage reported in any state in PADD IV for the past two heating seasons.

#### PADD V

PADD V, comprising the west coast states, Nevada, Arizona, Alaska, and Hawaii, accounted for approximately 8% of the

total U.S. distillate demand in the 1977-78 heating season. Of the total demand, 5% was met by stock drawdown, 3% by imports of distillates, and 92% was met by domestic production which accounted for 9% of total U.S. production of distillates.

Heating season degree days experienced in PADD V were 12.4% warmer than normal in 1976-77 and 36.0% warmer than normal in 1977-78. Anticipated increased distillate demand in 1978-79 for a colder than normal winter is projected to be about 10-15% greater than actual demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables D-2 and D-3 projects a 52% increase in distillate demand as an alternative fuel over actual usage reported for 1977-78 in PADD V. Distillate usage as an alternate fuel was 5% of the total distillate delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of distillates as an alternate fuel appears to be manageable since the projected requirement does not exceed the maximum alternate fuel usage reported in any state in PADD V for the past two heating seasons.



TABLE D-1

U.S. SUPPLY AND DEMAND BY HEATING SEASON  
MIDDLE DISTILLATES  
MBBL

|                          | PROJECTED         |           | ACTUAL* |         |         |         |         |
|--------------------------|-------------------|-----------|---------|---------|---------|---------|---------|
|                          | 1978-79<br>Colder | Normal    | 1977-78 | 1976-77 | 1975-76 | 1974-75 | 1973-74 |
| Primary Stocks Inventory |                   |           |         |         |         |         |         |
| Inventory: Nov. 1        | 217,059           | 217,059   | 267,392 | 235,599 | 226,113 | 209,908 | 202,965 |
| Mar. 31                  | 130,000           | 130,000   | 137,897 | 141,882 | 138,306 | 161,111 | 128,822 |
| Drawdown                 | 87,059            | 87,059    | 129,495 | 93,717  | 87,807  | 48,797  | 74,143  |
| (MBD)                    | (577)             | (577)     | (858)   | (621)   | (581)   | (323)   | (491)   |
| Production:              | 526,891           | 526,891   | 473,218 | 503,135 | 425,466 | 416,032 | 410,334 |
| (MBD)                    | (3,489)           | (3,489)   | (3,134) | (3,332) | (2,818) | (2,755) | (2,718) |
| Imports:                 | 50,550            | 37,750    | 30,189  | 56,321  | 23,214  | 54,172  | 58,769  |
| (MBD)                    | (335)             | (250)     | (200)   | (373)   | (154)   | (359)   | (389)   |
| Apparent Demand:         | 664,500**         | 651,700** | 632,902 | 653,173 | 536,487 | 519,001 | 543,246 |
| (MBD)                    | (4,401)           | (4,316)   | (4,192) | (4,326) | (3,553) | (3,437) | (3,598) |

Data Source: \*Monthly Energy Review - U.S. Department of Energy

\*\* Based on DOE Short-Term Petroleum Demand Model

TABLE D-2

## DISTILLATE USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)

(M Gallons Per Day)

|                | ALTERNATE FUEL USAGE 1/ |        |           |        |           |             | TOTAL DELIVERIES 2/ |                   |          |                   |
|----------------|-------------------------|--------|-----------|--------|-----------|-------------|---------------------|-------------------|----------|-------------------|
|                | 1976-77                 |        | 1977-78   |        | 1978-79   |             | 1976-77             | 1977-78           |          |                   |
|                | Projected               | Actual | Projected | Actual | Projected | % Inc./Act* | All Uses            | % Alt.**<br>Fuels | All Uses | % Alt.**<br>Fuels |
| PADD I         | 4,151                   | 6,181  | 4,996     | 3,589  | 3,749     | 4%          | 105,929             | 6%                | 90,938   | 4%                |
| II             | 4,497                   | 8,256  | 6,906     | 5,276  | 4,716     | (11%)       | 55,889              | 15%               | 52,969   | 10%               |
| III            | 1,774                   | 1,915  | 1,850     | 1,549  | 1,736     | 12%         | 16,840              | 11%               | 18,302   | 8%                |
| IV             | 578                     | 264    | 207       | 80     | 110       | 38%         | 4,275               | 6%                | 4,194    | 2%                |
| V              | 3,060                   | 1,615  | 3,868     | 686    | 1,042     | 52%         | 14,447              | 11%               | 13,318   | 5%                |
| NATIONAL TOTAL | 14,060                  | 18,231 | 17,827    | 11,180 | 11,353    | 2%          | 197,380             | 9%                | 179,721  | 6%                |
| REGION I       | 3                       | 26     | 27        | 10     | 28        | 180%        | 22,870              | 0                 | 18,820   | 0                 |
| II             | 613                     | 1,123  | 886       | 594    | 807       | 36%         | 36,593              | 3%                | 30,759   | 2%                |
| III            | 1,610                   | 2,119  | 1,534     | 967    | 906       | (6%)        | 30,473              | 7%                | 26,950   | 4%                |
| IV             | 3,483                   | 5,414  | 4,736     | 3,936  | 3,866     | (2%)        | 25,654              | 21%               | 23,537   | 17%               |
| V              | 2,605                   | 4,801  | 3,836     | 2,466  | 2,176     | (12%)       | 37,199              | 13%               | 35,455   | 7%                |
| VI             | 1,256                   | 1,010  | 1,038     | 863    | 996       | 15%         | 14,340              | 7%                | 16,879   | 5%                |
| VII            | 841                     | 1,721  | 1,563     | 1,508  | 1,352     | (10%)       | 9,692               | 18%               | 8,046    | 19%               |
| VIII           | 527                     | 331    | 281       | 150    | 173       | 15%         | 5,298               | 6%                | 5,266    | 3%                |
| IX             | 2,825                   | 1,474  | 3,715     | 683    | 1,029     | 51%         | 8,686               | 17%               | 7,545    | 9%                |
| X              | 297                     | 212    | 211       | 3      | 20        | 567%        | 6,575               | 3%                | 6,464    | 0                 |
| NATIONAL TOTAL | 14,060                  | 18,231 | 17,827    | 11,180 | 11,353    | 2%          | 197,380             | 9%                | 179,721  | 6%                |

Data Source: 1/ Alternate Fuel Demand EIA-50

2/ Prime Supplier Monthly Report EIA-25

\* % Increase or (decrease) of projected usage over 1977-78 actual usage.

\*\* Actual Alternate Fuel Usage over Total Deliveries for all uses same year

TABLE D-3

DISTILLATE USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
(M Gallons Per Day)

|            | ALTERNATE FUEL USAGE 1/ |        |           |        |           |               | TOTAL DELIVERIES 2/ |                  |          |                  |
|------------|-------------------------|--------|-----------|--------|-----------|---------------|---------------------|------------------|----------|------------------|
|            | 1976-77                 |        | 1977-78   |        | 1978-79   |               | 1976-77             |                  | 1977-78  |                  |
|            | Projected               | Actual | Projected | Actual | Projected | %<br>Inc/Alt* | All Uses            | % Alt**<br>Fuels | All Uses | % Alt**<br>Fuels |
| Alabama    | 308                     | 727    | 594       | 521    | 587       | 12%           | 2,134               | 34%              | 1,915    | 27%              |
| Alaska     | 0                       | 0      | 0         | 0      | 0         | 0             | 839                 | 0                | 1,051    | 0                |
| Arizona    | 909                     | 307    | 513       | 219    | 250       | 14%           | 1,266               | 24%              | 930      | 24%              |
| Arkansas   | 62                      | 203    | 217       | 258    | 206       | (21%)         | 1,111               | 18%              | 1,026    | 25%              |
| California | 1,794                   | 1,028  | 3,009     | 259    | 533       | 105%          | 6,535               | 16%              | 5,697    | 5%               |
| Colorado   | 188                     | 82     | 62        | 26     | 40        | 53%           | 1,067               | 8%               | 1,095    | 2%               |
| Conn.      | 0                       | 20     | 22        | 8      | 22        | 175%          | 5,858               | 0                | 4,286    | 0                |
| Delaware   | 23                      | 17     | 17        | 16     | 16        | 0             | 1,057               | 2%               | 1,099    | 1%               |
| D.C.       | 4                       | 19     | 15        | 0      | 0         | 0             | 411                 | 5%               | 434      | 0                |
| Florida    | 238                     | 234    | 140       | 111    | 101       | (10%)         | 3,864               | 6%               | 3,581    | 3%               |
| Georgia    | 1,074                   | 1,624  | 1,476     | 1,087  | 1,142     | 5%            | 3,455               | 47%              | 2,763    | 39%              |
| Hawaii     | 0                       | 0      | 0         | 0      | 0         | 0             | 367                 | 0                | 433      | 0                |
| Idaho      | 61                      | 72     | 58        | 0      | 7         | 660%          | 815                 | 9%               | 691      | 0                |
| Illinois   | 252                     | 442    | 256       | 252    | 190       | (25%)         | 7,017               | 6%               | 6,826    | 4%               |
| Indiana    | 557                     | 897    | 889       | 553    | 581       | 5%            | 5,875               | 15%              | 6,178    | 9%               |
| Iowa       | 235                     | 516    | 479       | 391    | 392       | 0             | 3,133               | 16%              | 2,704    | 14%              |
| Kansas     | 274                     | 364    | 314       | 427    | 403       | (6%)          | 2,327               | 16%              | 1,681    | 25%              |
| Kentucky   | 422                     | 617    | 511       | 484    | 457       | (6%)          | 2,484               | 25%              | 2,505    | 19%              |
| Louisiana  | 691                     | 348    | 546       | 501    | 558       | 11%           | 3,270               | 11%              | 3,080    | 16%              |
| Maine      | 0                       | 0      | 0         | 0      | 0         | 0             | 2,480               | 0                | 2,223    | 0                |
| Maryland   | 321                     | 423    | 436       | 201    | 172       | (15%)         | 4,833               | 9%               | 4,465    | 5%               |
| Mass.      | 3                       | 5      | 5         | 2      | 5         | 150%          | 10,164              | 0                | 8,864    | 0                |
| Michigan   | 121                     | 187    | 198       | 93     | 89        | (5%)          | 5,743               | 3%               | 5,478    | 2%               |
| Minnesota  | 92                      | 938    | 360       | 583    | 602       | 3%            | 5,190               | 18%              | 4,611    | 13%              |
| Miss.      | 276                     | 252    | 243       | 192    | 178       | (8%)          | 1,738               | 14%              | 1,284    | 15%              |
| Missouri   | 162                     | 489    | 401       | 425    | 348       | (19%)         | 2,820               | 17%              | 2,364    | 18%              |
| Montana    | 1                       | 8      | 7         | 11     | 9         | (19%)         | 687                 | 1%               | 672      | 2%               |
| Nebraska   | 171                     | 351    | 369       | 266    | 209       | (12%)         | 1,412               | 25%              | 1,297    | 21%              |

Data Source: 1/ Alternate Fuel Demand EIA-50

2/ Prime Supplier Monthly Report EIA-25

\* % Increase or (decrease) of projected usage over 1977-78 actual usage.

\*\* Actual Alternate Fuel Usage over Total Deliveries for all uses same year

DISTILLATE USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
(M Gallons Per Day)

|            | ALTERNATE FUEL USAGE 1/ |        |           |        |           |            | TOTAL DELIVERIES 2/ |                  |          |                   |
|------------|-------------------------|--------|-----------|--------|-----------|------------|---------------------|------------------|----------|-------------------|
|            | 1976-77                 |        | 1977-78   |        | 1978-79   |            | 1976-77             |                  | 1977-78  |                   |
|            | Projected               | Actual | Projected | Actual | Projected | % Inc/Alt* | All Uses            | % Alt**<br>Fuels | All Uses | % Alt.**<br>Fuels |
| Nevada     | 121                     | 140    | 193       | 205    | 245       | 19%        | 518                 | 27%              | 485      | 42%               |
| N. Hamp.   | 0                       | 0      | 0         | 0      | 0         | 0          | 1,669               | 0                | 1,325    | 0                 |
| N. Jersey  | 456                     | 464    | 512       | 393    | 502       | 27%        | 14,410              | 3%               | 11,667   | 3%                |
| N. Mexico  | 56                      | 38     | 52        | 11     | 42        | 272%       | 867                 | 4%               | 970      | 1%                |
| N. York    | 156                     | 657    | 377       | 199    | 305       | 53%        | 22,179              | 3%               | 19,091   | 1%                |
| N. Caro.   | 391                     | 734    | 626       | 646    | 624       | (4%)       | 6,347               | 12%              | 5,772    | 11%               |
| N. Dakota  | 0                       | 46     | 45        | 31     | 29        | (7%)       | 1,024               | 4%               | 941      | 3%                |
| Ohio       | 1,252                   | 1,762  | 1,156     | 606    | 231       | (62%)      | 8,552               | 21%              | 8,400    | 7%                |
| Oklahoma   | 66                      | 73     | 25        | 27     | 24        | (12%)      | 1,372               | 5%               | 1,777    | 2%                |
| Oregon     | 124                     | 52     | 39        | 3      | 13        | 333%       | 1,958               | 3%               | 1,999    | 0                 |
| Penn.      | 705                     | 1,031  | 544       | 397    | 358       | (10%)      | 16,572              | 6%               | 14,145   | 3%                |
| R. Island  | 0                       | 0      | 0         | 0      | 0         | 0          | 1,997               | 0                | 1,572    | 0                 |
| S. Caro.   | 223                     | 321    | 308       | 173    | 142       | (18%)      | 2,327               | 14%              | 2,293    | 8%                |
| S. Dakota  | 9                       | 93     | 87        | 40     | 40        | 0          | 814                 | 11%              | 822      | 5%                |
| Tennessee  | 552                     | 906    | 838       | 722    | 636       | (12%)      | 3,304               | 27%              | 3,423    | 21%               |
| Texas      | 380                     | 348    | 198       | 68     | 166       | (144%)     | 7,720               | 5%               | 10,027   | 1%                |
| Utah       | 129                     | 74     | 38        | 34     | 33        | (3%)       | 803                 | 9%               | 766      | 4%                |
| Vermont    | 0                       | 0      | 0         | 0      | 0         | 0          | 704                 | 0                | 549      | 0                 |
| Virginia   | 270                     | 411    | 389       | 317    | 331       | 4%         | 6,176               | 7%               | 5,610    | 6%                |
| Washington | 112                     | 89     | 113       | 0      | 0         | 0          | 2,964               | 3%               | 2,723    | 0                 |
| W. Virg.   | 287                     | 219    | 133       | 35     | 30        | (15%)      | 1,425               | 15%              | 1,198    | 3%                |
| Wisconsin  | 331                     | 575    | 477       | 379    | 483       | 27%        | 4,823               | 12%              | 3,963    | 10%               |
| Wyoming    | 199                     | 28     | 41        | 9      | 21        | 133%       | 903                 | 3%               | 969      | 1%                |

Data Source: 1/ Alternate Fuel Demand EIA-50

2/ Prime Supplier Monthly Report EIA-25

\* % Increase or (decrease) of projected usage over 1977-78 actual usage.

\*\* Actual Alternate Fuel Usage over Total Deliveries for all uses same year

An Analysis of the Availability of Residual  
Fuel Oils for the 1978-79 Heating Season  
(November 1 - March 31)

"Residual fuel oils" (residual fuels) include heavy fuel oils which are referred to as No. 4, No. 5, No. 6 and intermediate fuel oils which are blends containing No. 6 oil, and Bunker C, Navy Special Fuel Oil as well as crude oil when used as a fuel only.

Uses

Residual fuels are used primarily for electric utility generation in the northeast, upper midwest and California. The second major use of residual fuel is for space heating. Industrial applications, water transportation, and railroad use are third in significance (Sales of Residual Fuel Oils by Use - Exhibit No. 15). Historical supply/demand statistics for nonutility use of residual fuels indicate major usage to be in the states bordering and east of the Mississippi River with the largest percentage of use in the Great Lakes area. Statistics for utility use of residual fuels is not available for states or for DOE Regions.

Supply - National

Due to the colder weather experienced in the winters of 1977-78 (8.4% colder than normal) and 1976-77 (15% colder

than normal) as shown in Exhibit No. 16, Heating Season Degree Day Information, actual average demand for residual fuels for the past two heating seasons was up about 18% over the close to normal winter of 1975-76. To meet the higher demand of the past two heating seasons, average domestic production was up about 32% over the average for the 1975-76 heating season, and the average rate of imports for the same period was up 5%. The inventory level at the beginning of the 1977-78 heating season (November 1) was about 19% higher than the average of the two previous years which permitted a higher than average stock drawdown in the 1977-78 heating season. The stock drawdown of 223 MBD provided 7% of the total U.S. residual fuel demand of 3376 MBD in the 1977-78 heating season; average production of 1773 MBD provided 52%; and imports of 1380 MBD provided 41% of the total demand.

As shown on Table R-1, it is reported that for the 1978-79 heating season, the beginning inventory level is about 15% below the 1977-78 heating season level which, when compared with previous heating seasons, will permit a lower drawdown of stocks (141 MBD) than last winter without jeopardizing the overall inventory position. It is anticipated that 1978-79 heating season demand will be about 2% above the 1977-78 heating season for a normal winter and up about 5% for a colder than normal winter. This cold weather demand, including alternate fuel requirements for natural

gas curtailment, as projected in Figures R-2 and R-3, could be met by maintaining the domestic production rates achieved in the past two heating seasons, and by importing at about the average rate of the 1976-77 heating season which was, by far, the coldest winter in recent years. The proposed production and import rates are well within the capability of the petroleum industry, U.S. and worldwide, respectively; therefore, no shortages of residual fuels due to lack of total supply are expected to occur in the 1978-79 heating season.

Geographical Supply/Demand Assessment  
PADD I

PADD I, comprising the New England, central Atlantic, and lower Atlantic states, accounted for approximately 54% of the total U.S. residual fuel oil demand in the 1977-78 heating season. Of the total demand in PADD I, 8% was met by stock drawdown, 18% by domestic production, and 74% by imports of residual fuels. PADD I production of residual fuels accounted for 19% of total U.S. production, and imports were 95% of the total U.S. imports for the heating season. PADD I's dependency on imports is concentrated in New England and the central Atlantic districts where combined usage was 77% of the total imports into PADD I in the 1977-78 heating season. Increased demand in the New England and central Atlantic states, therefore, will most likely be met by imports.

Heating season degree days experienced in PADD I were 16.2% colder than normal in 1976-77 and 8.5% colder than normal in 1977-78 and about equalled the corresponding national averages of 15.1% in 1976-77 and 8.4% in 1977-78. PADD I residual fuel demand in 1978-79 for a colder than normal winter is projected to be about 3-4% greater than actual demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables R-2 and R-3 projects an 11% decrease in residual fuel demand as an alternate fuel over actual usage reported for 1977-78 in PADD I. Residual fuel usage as an alternate fuel was 7% of the total residual fuel delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of residual fuel as an alternate fuel appears to be manageable even though the projected requirement for several states exceeds the maximum alternate fuel usage reported in the past two heating seasons. No supply problems are anticipated since projected increases in usage of residual fuels, including alternate fuel usage, can be met with increased imports which account for about 75% of PADD I demand.

#### PADD II

PADD II, comprising fifteen states in the upper midwest, accounted for approximately 12% of the total U.S. residual fuel oil demand in the 1977-78 heating season. Of the demand, 6% was met by stock drawdown and 12% by imports of residual



fuels which accounted for 3% of the total U.S. imports for the heating season. In PADD II, 82% of total demand was met by domestic production which accounted for 19% of total U.S. production of residual fuels.

Heating season degree days experienced in PADD II were 17.6% colder than normal in 1976-77 and 16.0% colder than normal in 1977-78 and about equalled the national average of 15.1% in 1976-77, but was 7.6% colder than the 1977-78 national average. PADD II residual fuel demand in 1978-79 for a colder than normal winter is projected to be about 3-4% greater than actual demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables R-2 and R-3 projects a 7% increase in distillate demand as an alternate fuel over actual usage reported for 1977-78 in PADD II. Residual fuel usage as an alternate fuel was 32% of the total residual fuel delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of residual fuel as an alternate fuel appears to be manageable since the projected requirement does not exceed the maximum alternate fuel usage reported in any state in PADD II for the past two heating seasons.

### PADD III

PADD III, comprising states bordering on the gulf coast, except Florida, plus Arkansas and New Mexico, accounted for

approximately 17% of the total U.S. residual fuel oil demand in the 1977-78 heating season. Of the total demand, 6% was met by stock drawdown, and 94% was met by domestic production which accounted for 31% of total U.S. production of residual fuels. Imports used in PADD III are negligible.

Heating season degree days experienced in PADD III were 32.8% colder than normal in 1976-77 and 41.9% colder than normal in 1977-78 and were much colder than the corresponding national averages of 15.1% in 1976-77 and 8.4% in 1977-78. Residual fuel demand in 1978-79 for a colder than normal winter is projected to be no greater than maximum demand in the past two heating seasons.

Analysis of alternate fuel usage data for the heating season as shown on Tables R-2 and R-3 projects a 13% increase in residual fuel demand as an alternate fuel over actual usage reported for 1977-78 in PADD III. Residual fuel usage as an alternate fuel was 36% of the total residual fuel delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of residual fuel as an alternate fuel appears to be manageable since that requirement does not exceed the maximum alternate fuel usage reported in any state in PADD III for the past two heating seasons except in Arkansas (4%) and Louisiana (11%).

No supply problems are anticipated since the increase can be met with local domestic production which accounts for about 95% of PADD III demand.

#### PADD IV

PADD IV, comprising the Rocky Mountains states, accounted for approximately 1% of the total U.S. residual fuel oil demand in the 1977-78 heating season. Of the total demand, 9% was met by stock drawdown and 91% of the demand was met by domestic production which accounted for 2% of total U.S. production of residual fuels. Imports of residual fuels are negligible in PADD IV. Since stock drawdown and imports account for a small percentage of the total demand, there is a high dependency on pipeline movement of domestic production and any extended transportation delays could create localized supply problems.

Heating season degree days experienced in PADD IV were about normal in 1976-77 and warmer than normal in 1977-78. Anticipated increased residual fuel demand in 1978-79 for a colder than normal winter is projected to be no greater than maximum demand in the past two heating seasons.

Analysis of alternate fuel usage data for the heating season as shown on Tables R-2 and R-3 projects a 63% increase in residual fuel demand as an alternate fuel over actual usage reported for 1977-78 in PADD IV. Residual fuel usage as an alternate fuel was 11% of the total residual fuel delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of residual fuel as an alternate fuel appears to be manageable since the projected requirement does not exceed the total alternate fuel usage reported for all states in PADD IV in the 1976-77 heating season.

#### PADD V

PADD V, comprising the west coast states, Nevada, Arizona, Alaska, and Hawaii, accounted for approximately 16% of the total U.S. residual fuel oil demand in the 1977-78 heating season. Of the total demand, 2% was met by stock drawdown, 7% by imports of residual fuels, and 91% was met by domestic production which accounted for 29% of total U.S. production of residual fuels.

Heating season degree days experienced in PADD V were 12.4% warmer than normal in 1976-77 and 36.0% warmer than normal in 1977-78. Anticipated increased residual fuel demand in 1978-79 for a colder than normal winter is projected to be about 5-6% greater than actual demand in the winter of 1977-78.

Analysis of alternate fuel usage data for the heating season as shown on Tables R-2 and R-3 projects a 27% increase in residual fuel demand as an alternate fuel over actual usage reported for 1977-78 in PADD V. Residual fuel usage as an alternate fuel was 55% of the total residual fuel delivered in the 1977-78 heating season. The 1978-79 projected demand, by state, for use of residual fuel as an alternate fuel appears to be manageable since the projected requirement does not exceed the total alternate fuel usage reported for all states in PADD V in the 1976-77 heating season.

TABLE R-1

U.S. SUPPLY AND DEMAND BY HEATING SEASON  
RESIDUAL FUELS  
MBBL

|                          | PROJECTED |           | ACTUAL* |         |         |         |         |
|--------------------------|-----------|-----------|---------|---------|---------|---------|---------|
|                          | 1978-79   |           | 1977-78 | 1976-77 | 1975-76 | 1974-75 | 1973-74 |
|                          | Colder    | Normal    |         |         |         |         |         |
| Primary Stocks Inventory |           |           |         |         |         |         |         |
| Inventory: Nov. 1        | 81,345    | 81,345    | 95,896  | 79,117  | 81,858  | 58,679  | 54,964  |
| Mar. 31                  | 60,000    | 60,000    | 62,193  | 71,186  | 65,132  | 64,148  | 47,222  |
| Drawdown                 | 21,345    | 21,345    | 33,703  | 7,931   | 16,726  | -5,469  | 7,742   |
| (MBD)                    | (141)     | (141)     | (223)   | (52)    | (111)   | (-36)   | (51)    |
| Production:              | 264,250   | 264,250   | 267,696 | 268,714 | 204,039 | 200,301 | 159,217 |
| (MBD)                    | (1,750)   | (1,750)   | (1,773) | (1,780) | (1,351) | (1,326) | (1,055) |
| Imports:                 | 250,405   | 235,405   | 208,453 | 248,695 | 217,048 | 232,362 | 275,406 |
| (MBD)                    | (1,659)   | (1,559)   | (1,381) | (1,647) | (1,438) | (1,539) | (1,824) |
| Apparent Demand:         | 536,000** | 521,000** | 509,858 | 525,334 | 437,813 | 427,194 | 442,365 |
| (MBD)                    | (3,550)   | (3,450)   | (3,377) | (3,479) | (2,900) | (2,829) | (2,930) |

Data Source: \*Monthly Energy Review - U.S. Department of Energy

\*\* Based on DOE Short-Term Petroleum Demand Model

TABLE R-2

## RESIDUAL FUEL OIL USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)

(M Gallons Per Day)

|                   | ALTERNATE FUEL USAGE <sup>1/</sup> |        |           |        |           |                | TOTAL DELIVERIES <sup>2/</sup>  |                   |          |                   |
|-------------------|------------------------------------|--------|-----------|--------|-----------|----------------|---------------------------------|-------------------|----------|-------------------|
|                   | 1976-77                            |        | 1977-78   |        | 1978-79   |                | 1976-77                         |                   | 1977-78  |                   |
|                   | Projected                          | Actual | Projected | Actual | Projected | %<br>Inc/Act * | All Uses                        | % Alt.**<br>Fuels | All Uses | % Alt.**<br>Fuels |
| PADD I            | 7,752                              | 8,038  | 7,488     | 5,645  | 6,284     | 11%            | 78,876                          | 10%               | 75,852   | 7%                |
| II                | 6,101                              | 8,207  | 7,790     | 5,249  | 5,616     | 7%             | 17,284                          | 47%               | 16,632   | 32%               |
| III               | 8,362                              | 9,303  | 8,847     | 8,962  | 10,114    | 13%            | 25,136                          | 37%               | 24,654   | 36%               |
| IV                | 611                                | 424    | 507       | 220    | 359       | 63%            | 2,142                           | 20%               | 1,974    | 11%               |
| V                 | 18,975                             | 18,316 | 17,817    | 12,461 | 15,846    | 27%            | 22,680                          | 81%               | 22,722   | 55%               |
| NATIONAL<br>TOTAL | 41,801                             | 44,288 | 42,449    | 32,537 | 38,219    | 17%            | 146,118                         | 30%               | 141,834  | 23%               |
| REGION            |                                    |        |           |        |           |                |                                 |                   |          |                   |
| I                 | 62                                 | 121    | 134       | 77     | 148       | 92%            | Data Not Available<br>by Region |                   |          |                   |
| II                | 1,754                              | 1,552  | 1,778     | 1,180  | 1,664     | 41%            |                                 |                   |          |                   |
| III               | 1,144                              | 1,063  | 732       | 570    | 567       | 0              |                                 |                   |          |                   |
| IV                | 8,627                              | 9,050  | 8,773     | 7,306  | 7,633     | (4%)           |                                 |                   |          |                   |
| V                 | 3,368                              | 4,553  | 4,322     | 2,250  | 2,605     | 16%            |                                 |                   |          |                   |
| VI                | 5,183                              | 6,426  | 5,715     | 6,243  | 7,094     | 14%            |                                 |                   |          |                   |
| VII               | 2,016                              | 2,697  | 2,604     | 2,192  | 2,255     | 3%             |                                 |                   |          |                   |
| VIII              | 670                                | 504    | 571       | 258    | 407       | 58%            |                                 |                   |          |                   |
| IX                | 17,899                             | 17,833 | 17,325    | 12,434 | 15,778    | 27%            |                                 |                   |          |                   |
| X                 | 1,078                              | 489    | 495       | 27     | 68        | 52%            |                                 |                   |          |                   |
| NATIONAL<br>TOTAL | 41,801                             | 44,288 | 42,449    | 32,537 | 38,219    | 17%            | 146,118                         | 30%               | 141,834  | 23%               |

Data Source: <sup>1/</sup> Alternate Fuel Demand EIA-50<sup>2/</sup> Prime Supplier Monthly Report EIA-25

\* % Increase or (decrease) of projected usage over 1977-78 actual usage.

\*\* Actual Alternate Fuel Usage over Total Deliveries for all uses same year

TABLE R-3

RESIDUAL FUEL USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
(M Gallons Per Day)

|             | ALTERNATE FUEL USAGE 1/ |        |           |        |           |            | TOTAL DELIVERIES 2/            |                |          |                |
|-------------|-------------------------|--------|-----------|--------|-----------|------------|--------------------------------|----------------|----------|----------------|
|             | 1976-77                 |        | 1977-78   |        | 1978-79   |            | 1976-77                        |                | 1977-78  |                |
|             | Projected               | Actual | Projected | Actual | Projected | % Inc/Act* | All Uses                       | % Alt.** Fuels | All Uses | % Alt.** Fuels |
| Alaska      | 0                       | 0      | 0         | 0      | 0         | 0          | Data Not Available<br>by State |                |          |                |
| Alabama     | 1,126                   | 1,229  | 1,350     | 1,053  | 1,255     | 19%        |                                |                |          |                |
| Arizona     | 817                     | 640    | 889       | 527    | 787       | 49%        |                                |                |          |                |
| Arkansas    | 2,951                   | 3,570  | 3,329     | 3,530  | 3,674     | 4%         |                                |                |          |                |
| California  | 16,629                  | 16,856 | 16,057    | 11,814 | 14,858    | 26%        |                                |                |          |                |
| Colorado    | 408                     | 239    | 279       | 61     | 145       | 138%       |                                |                |          |                |
| Connecticut | 10                      | 61     | 70        | 33     | 70        | 114%       |                                |                |          |                |
| Delaware    | 17                      | 5      | 2         | 2      | 3         | 30%        |                                |                |          |                |
| D.C.        | 1                       | 3      | 3         | 0      | 0         | 0          |                                |                |          |                |
| Florida     | 1,696                   | 1,719  | 1,407     | 1,242  | 1,338     | (8%)       |                                |                |          |                |
| Georgia     | 1,129                   | 1,265  | 1,229     | 950    | 986       | 4%         |                                |                |          |                |
| Hawaii      | 0                       | 0      | 0         | 0      | 0         | 0          |                                |                |          |                |
| Idaho       | 1                       | 5      | 3         | 0      | 0         | 0          |                                |                |          |                |
| Illinois    | 1,471                   | 1,763  | 1,878     | 877    | 1,234     | 41%        |                                |                |          |                |
| Indiana     | 46                      | 62     | 58        | 55     | 58        | 6%         |                                |                |          |                |
| Iowa        | 127                     | 150    | 157       | 90     | 125       | 39%        |                                |                |          |                |
| Kansas      | 1,326                   | 1,668  | 1,650     | 1,344  | 1,444     | 7%         |                                |                |          |                |
| Kentucky    | 37                      | 139    | 111       | 86     | 94        | 9%         |                                |                |          |                |
| Louisiana   | 1,439                   | 1,650  | 1,434     | 2,276  | 2,516     | 11%        |                                |                |          |                |
| Maine       | 0                       | 0      | 0         | 0      | 0         | 0          |                                |                |          |                |
| Maryland    | 343                     | 254    | 261       | 164    | 87        | (47%)      |                                |                |          |                |
| Mass.       | 36                      | 42     | 43        | 25     | 58        | 132%       |                                |                |          |                |
| Michigan    | 170                     | 355    | 448       | 169    | 178       | 5%         |                                |                |          |                |
| Minnesota   | 467                     | 1,000  | 1,135     | 652    | 711       | 9%         |                                |                |          |                |
| Miss.       | 2,133                   | 1,837  | 1,968     | 1,801  | 1,852     | 3%         |                                |                |          |                |
| Missouri    | 316                     | 573    | 433       | 491    | 402       | (18%)      |                                |                |          |                |
| Montana     | 0                       | 15     | 76        | 67     | 74        | 10%        |                                |                |          |                |
| Nebraska    | 268                     | 307    | 364       | 267    | 283       | 6%         |                                |                |          |                |

Data Source: 1/ Alternate Fuel Demand EIA-50

2/ Prime Supplier Monthly Report EIA-25

\* % increase or (decrease) of projected usage over 1977-78 actual usage.

\*\* Actual Alternate Fuel Usage over Total Deliveries for all uses same year

RESIDUAL FUEL OIL USAGE AS AN ALTERNATE FUEL BY HEATING SEASON (NOV 1 - MAR 31)  
(M Gallons Per Day)

|            | ALTERNATE FUEL USAGE 1/ |        |           |        |           |            | TOTAL DELIVERIES 2/            |          |          |          |
|------------|-------------------------|--------|-----------|--------|-----------|------------|--------------------------------|----------|----------|----------|
|            | 1976-77                 |        | 1977-78   |        | 1978-79   |            | 1976-77                        | % Alt.** | 1977-78  | % Alt.** |
|            | Projected               | Actual | Projected | Actual | Projected | % Inc/Act* | All Uses                       | Fuels    | All Uses | Fuels    |
| Nevada     | 454                     | 336    | 379       | 93     | 133       | 43%        | Data Not Available<br>by State |          |          |          |
| N. Hamp.   | 10                      | 13     | 13        | 11     | 13        | 18%        |                                |          |          |          |
| N. Jersey  | 641                     | 627    | 646       | 439    | 654       | 49%        |                                |          |          |          |
| N. Mexico  | 219                     | 209    | 168       | 101    | 220       | 118%       |                                |          |          |          |
| N. York    | 1,113                   | 925    | 1,132     | 741    | 1,009     | 36%        |                                |          |          |          |
| N. Caro.   | 875                     | 1,134  | 1,099     | 712    | 708       | 0          |                                |          |          |          |
| N. Dakota  | 23                      | 35     | 40        | 11     | 15        | 36%        |                                |          |          |          |
| Ohio       | 868                     | 880    | 417       | 224    | 125       | (44%)      |                                |          |          |          |
| Oklahoma   | 139                     | 189    | 185       | 135    | 87        | (36%)      |                                |          |          |          |
| Oregon     | 375                     | 244    | 170       | 19     | 48        | 153%       |                                |          |          |          |
| Penn.      | 480                     | 489    | 225       | 185    | 245       | 32%        |                                |          |          |          |
| R. Island  | 0                       | 0      | 0         | 0      | 0         | 0          |                                |          |          |          |
| S. Caro.   | 1,087                   | 1,184  | 1,109     | 915    | 874       | (4%)       |                                |          |          |          |
| S. Dakota  | 38                      | 50     | 28        | 27     | 33        | 22%        |                                |          |          |          |
| Tennessee  | 432                     | 543    | 500       | 547    | 527       | (4%)       |                                |          |          |          |
| Texas      | 384                     | 807    | 599       | 201    | 597       | 197%       |                                |          |          |          |
| Utah       | 189                     | 127    | 86        | 42     | 85        | 102%       |                                |          |          |          |
| Vermont    | 7                       | 6      | 7         | 8      | 7         | (13%)      |                                |          |          |          |
| Virginia   | 198                     | 218    | 189       | 199    | 205       | 3%         |                                |          |          |          |
| Washington | 701                     | 240    | 321       | 7      | 19        | 171%       |                                |          |          |          |
| W. Virg.   | 107                     | 95     | 52        | 21     | 27        | 29%        |                                |          |          |          |
| Wisconsin  | 346                     | 494    | 387       | 274    | 298       | 9%         |                                |          |          |          |
| Wyoming    | 12                      | 38     | 63        | 50     | 54        | 8%         |                                |          |          |          |

Data Source: 1/ Alternate Fuel Demand EIA-50

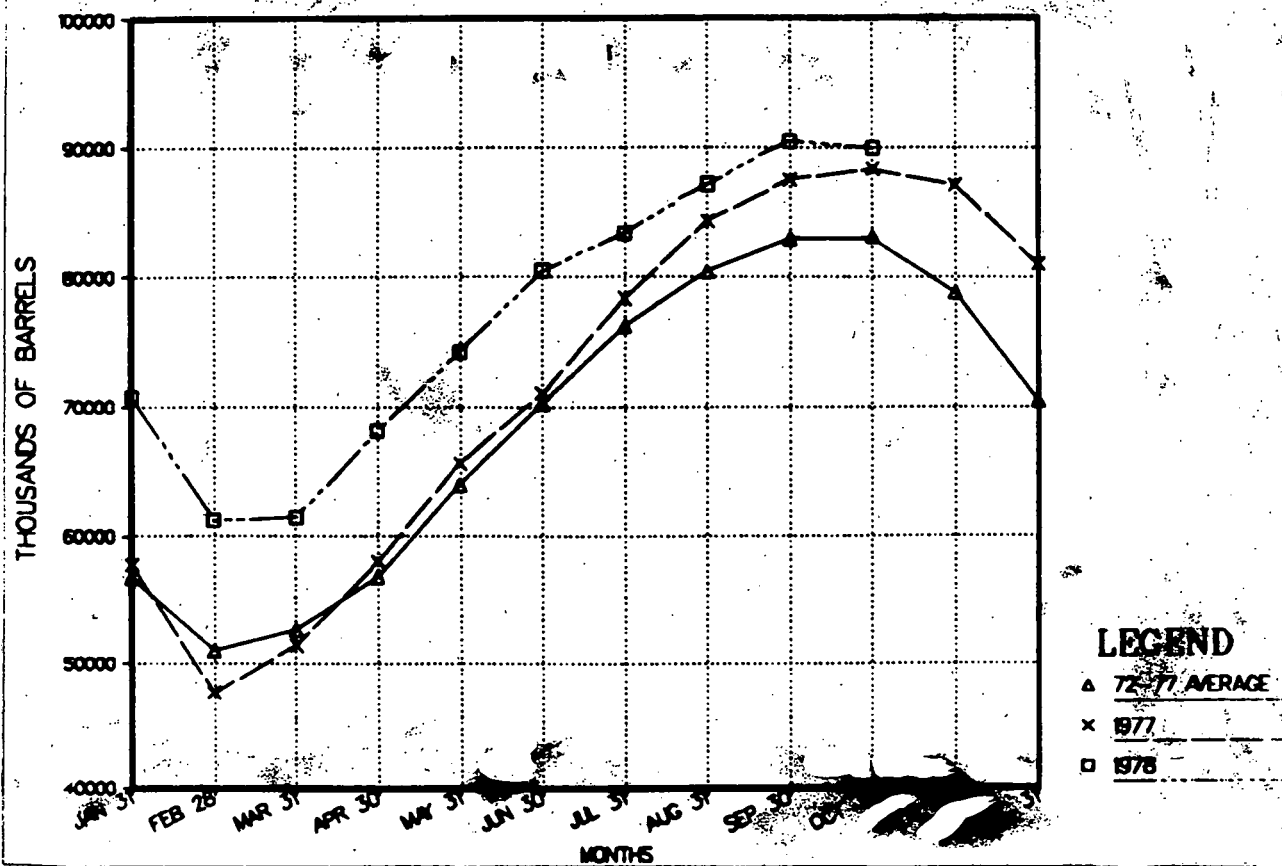
2/ Prime Supplier Monthly Report EIA-25

\* % increase or (decrease) of projected usage over 1977-78 actual usage.

\*\* Actual Alternate Fuel Usage over Total Deliveries for all uses same year



## PROPANE STOCKS



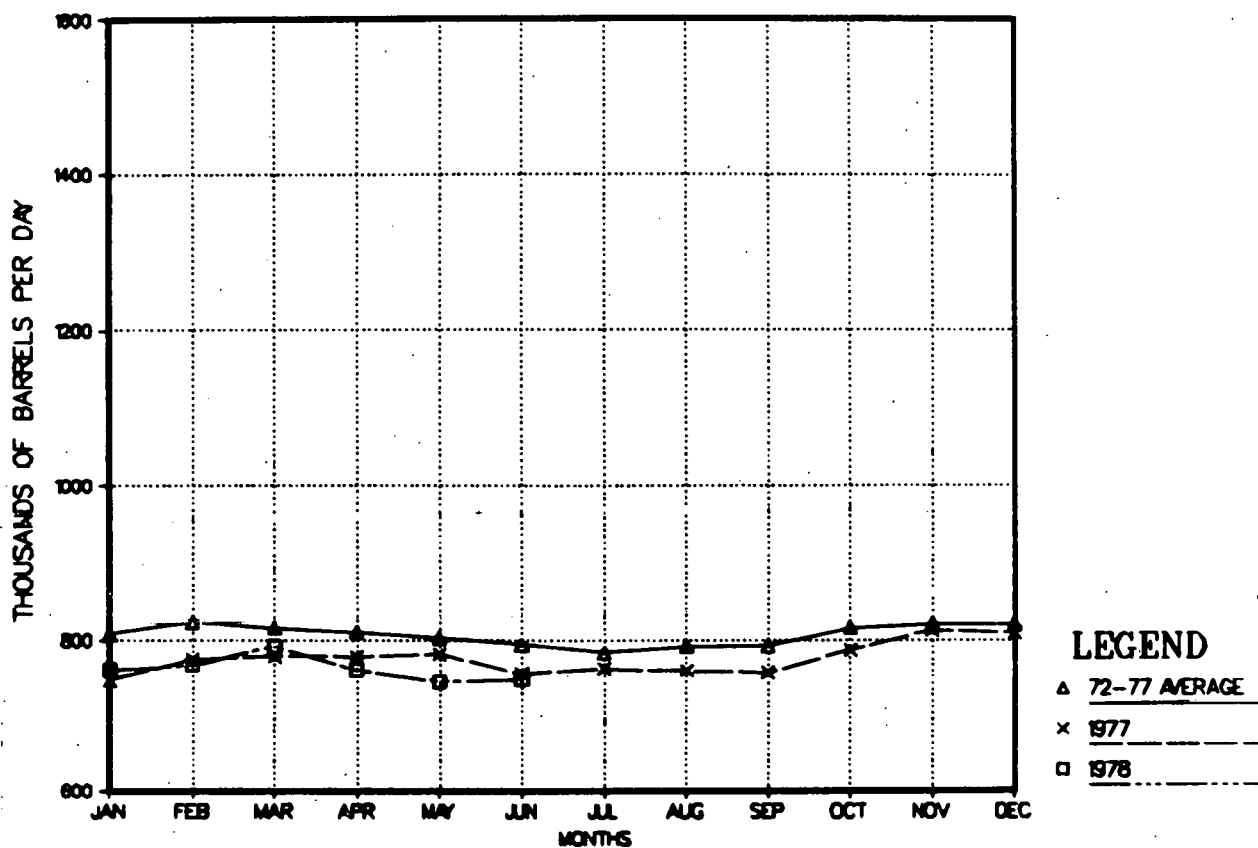
## PROPANE STOCKS

|           | AVERAGE<br>1972-1977 | 1977   | 1978    |
|-----------|----------------------|--------|---------|
| JANUARY   | 56,799               | 57,816 | 70,789  |
| FEBRUARY  | 51,012               | 47,634 | 61,223  |
| MARCH     | 52,699               | 51,467 | 61,471  |
| APRIL     | 56,905               | 58,081 | 68,134  |
| MAY       | 63,987               | 65,681 | 74,256  |
| JUNE      | 70,257               | 71,070 | 80,499  |
| JULY      | 76,232               | 78,352 | 83,365* |
| AUGUST    | 80,407               | 84,309 | 87,149* |
| SEPTEMBER | 83,055               | 87,528 | 90,471* |
| OCTOBER   | 83,095               | 88,345 | 89,949* |
| NOVEMBER  | 78,929               | 87,081 |         |
| DECEMBER  | 70,576               | 80,996 |         |

SOURCE DATA: BOM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## PROPANE PRODUCTION



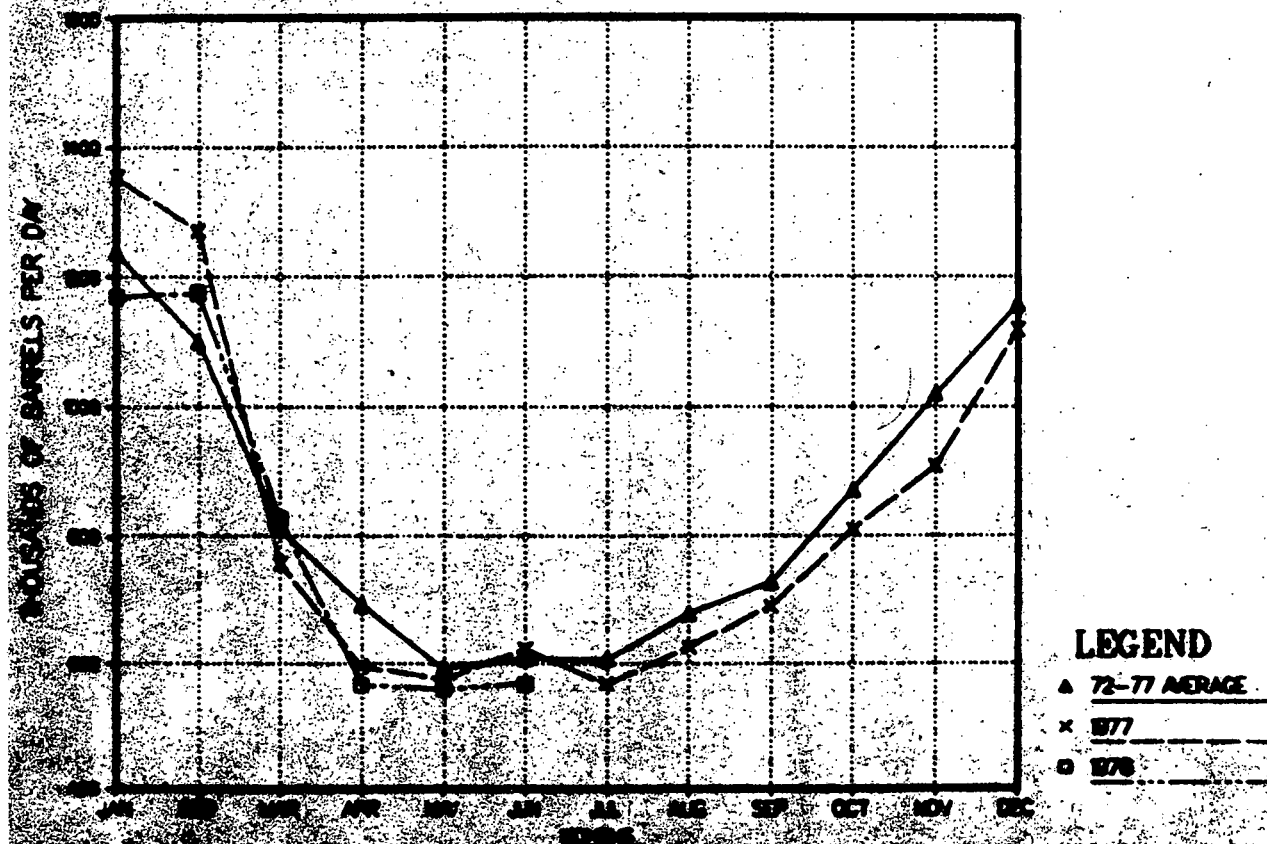
PROPANE PRODUCTION

|           | AVERAGE<br>1972-1977 | 1977 | 1978 |
|-----------|----------------------|------|------|
| JANUARY   | 808                  | 747  | 760  |
| FEBRUARY  | 824                  | 774  | 767  |
| MARCH     | 815                  | 779  | 792  |
| APRIL     | 811                  | 778  | 760  |
| MAY       | 803                  | 782  | 745  |
| JUNE      | 794                  | 755  | 748  |
| JULY      | 784                  | 762  |      |
| AUGUST    | 792                  | 759  |      |
| SEPTEMBER | 793                  | 757  |      |
| OCTOBER   | 811                  | 787  |      |
| NOVEMBER  | 820                  | 813  |      |
| DECEMBER  | 819                  | 810  |      |

SOURCE DATA: BDM/ODE

\*- BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DUE DATA AS AVAILABLE.

## DEMAND FOR PROPANE



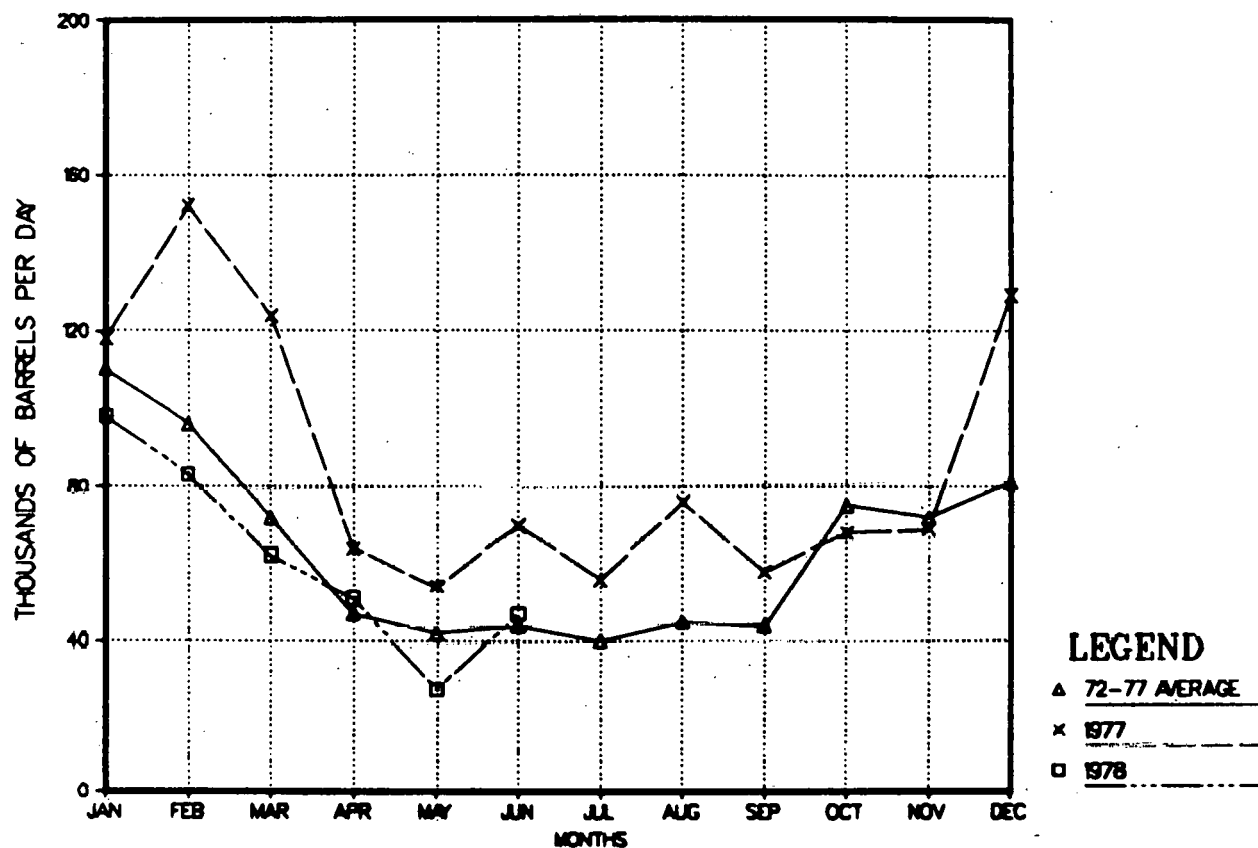
## DEMAND FOR PROPANE

|           | AVERAGE<br>1972-1977 | 1977  | 1978  |
|-----------|----------------------|-------|-------|
| JANUARY   | 1,239                | 1,354 | 1,170 |
| FEBRUARY  | 1,100                | 1,271 | 1,175 |
| MARCH     | 811                  | 758   | 828   |
| APRIL     | 694                  | 596   | 566   |
| MAY       | 592                  | 574   | 559   |
| JUNE      | 608                  | 624   | 568   |
| JULY      | 607                  | 567   |       |
| AUGUST    | 679                  | 627   |       |
| SEPTEMBER | 729                  | 692   |       |
| OCTOBER   | 862                  | 811   |       |
| NOVEMBER  | 1,001                | 908   |       |
| DECEMBER  | 1,151                | 1,119 |       |

SOURCE DATA: BOM/DOE

\*- BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## PROPANE IMPORTS



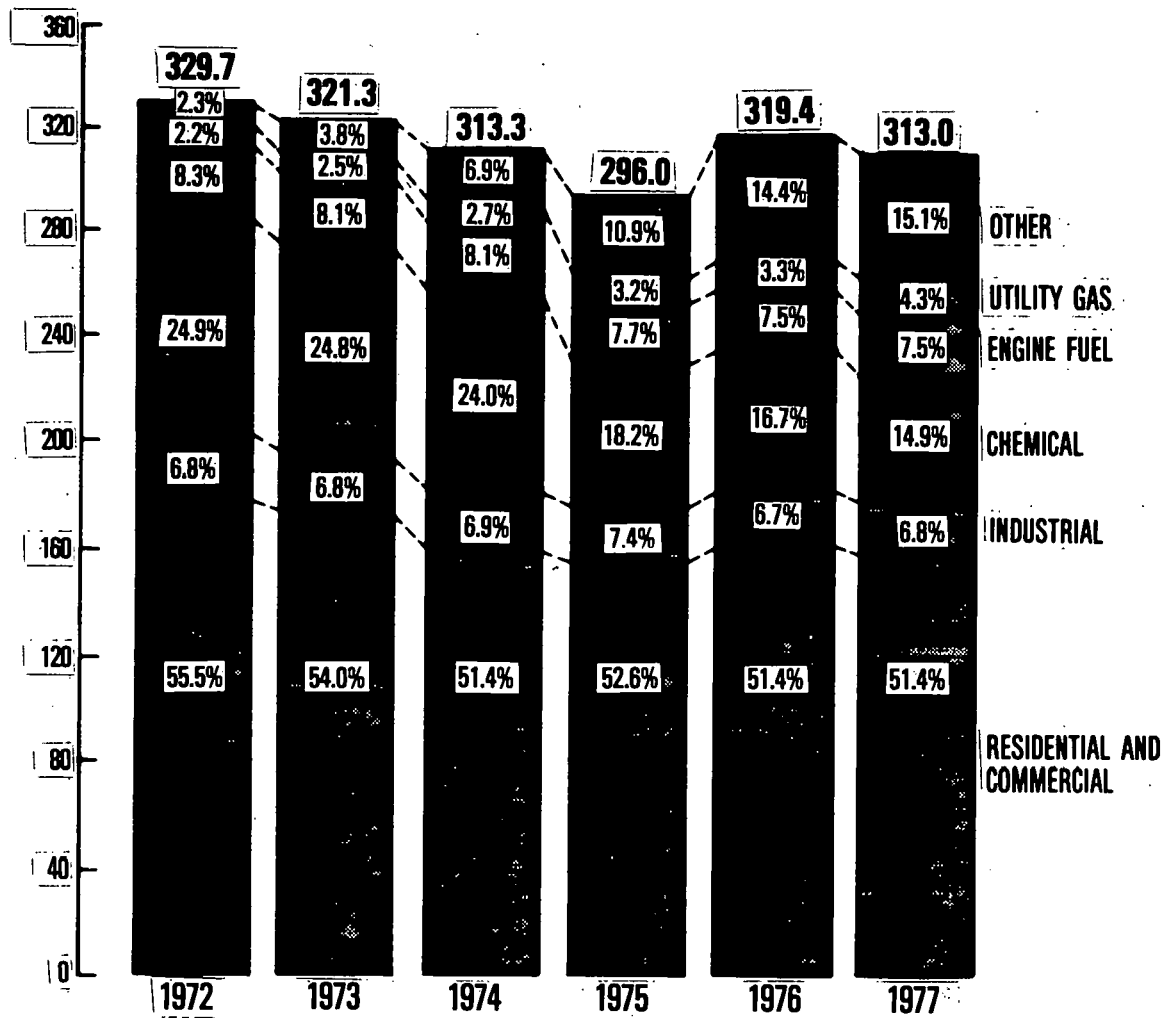
PROPANE IMPORTS

|           | AVERAGE<br>1972-1977 | 1977 | 1978 |
|-----------|----------------------|------|------|
| JANUARY   | 110                  | 118  | 98   |
| FEBRUARY  | 96                   | 175  | 83   |
| MARCH     | 72                   | 124  | 62   |
| APRIL     | 47                   | 64   | 51   |
| MAY       | 42                   | 54   | 27   |
| JUNE      | 44                   | 70   | 47   |
| JULY      | 40                   | 56   |      |
| AUGUST    | 45                   | 76   |      |
| SEPTEMBER | 47                   | 58   |      |
| OCTOBER   | 74                   | 68   |      |
| NOVEMBER  | 72                   | 69   |      |
| DECEMBER  | 89                   | 129  |      |

SOURCE DATA: BOM/DOE

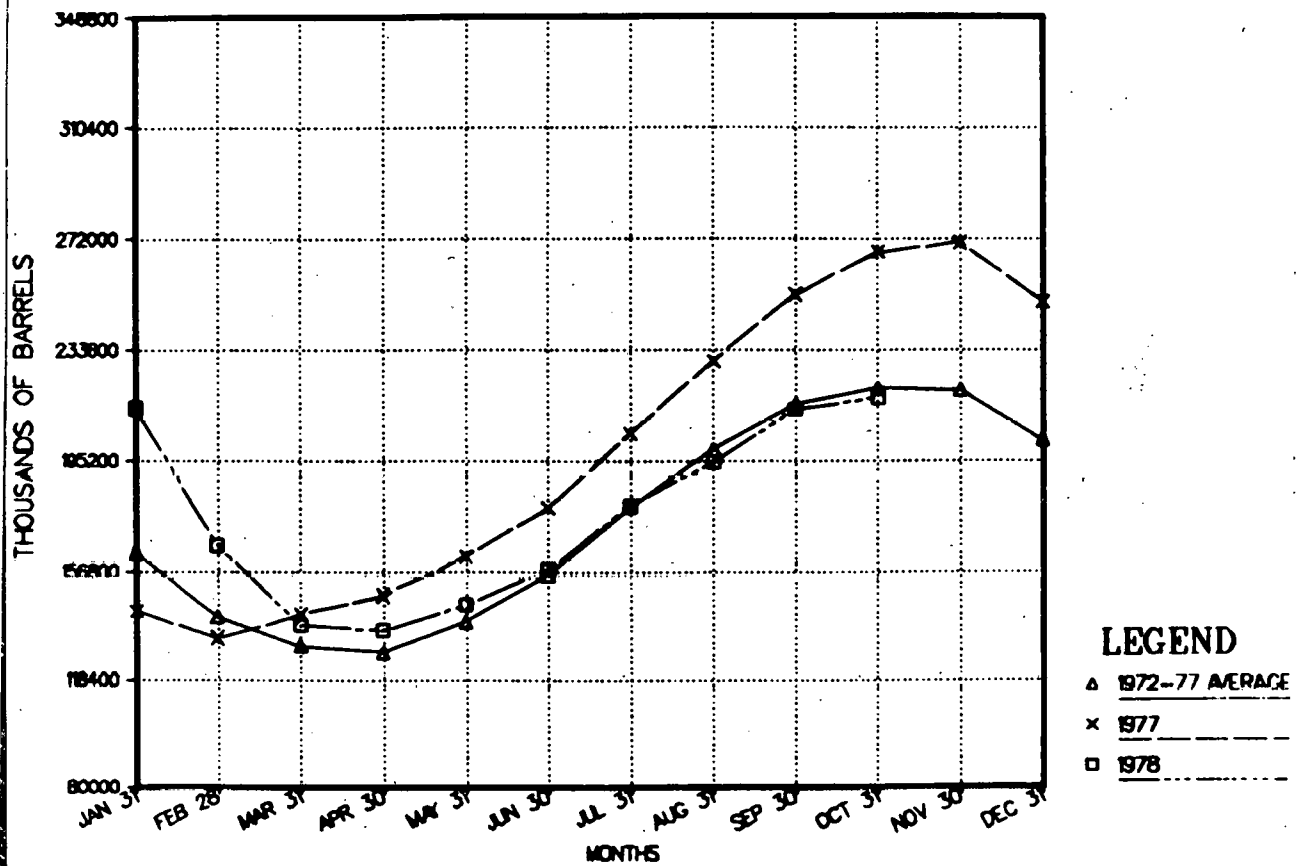
\*- BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

# **SALES OF PROPANE BY USE AS A PERCENT OF TOTAL** **MILLIONS OF BARRELS**



Source: B.O.M.J.E.I.A.

## MIDDLE DISTILLATE STOCKS



MIDDLE DISTILLATE STOCKS

|           | AVERAGE<br>1972-1977 | 1977    | 1978     |
|-----------|----------------------|---------|----------|
| JANUARY   | 163,383              | 142,989 | 213,411  |
| FEBRUARY  | 140,825              | 133,261 | 165,830  |
| MARCH     | 130,520              | 141,882 | 137,877  |
| APRIL     | 128,375              | 148,246 | 136,240  |
| MAY       | 139,168              | 162,123 | 145,046  |
| JUNE      | 155,740              | 178,842 | 157,515  |
| JULY      | 179,353              | 204,899 | 179,548* |
| AUGUST    | 199,271              | 229,757 | 194,815* |
| SEPTEMBER | 215,739              | 252,783 | 212,820* |
| OCTOBER   | 222,918              | 267,392 | 217,059* |
| NOVEMBER  | 220,934              | 270,571 |          |
| DECEMBER  | 199,292              | 250,280 |          |

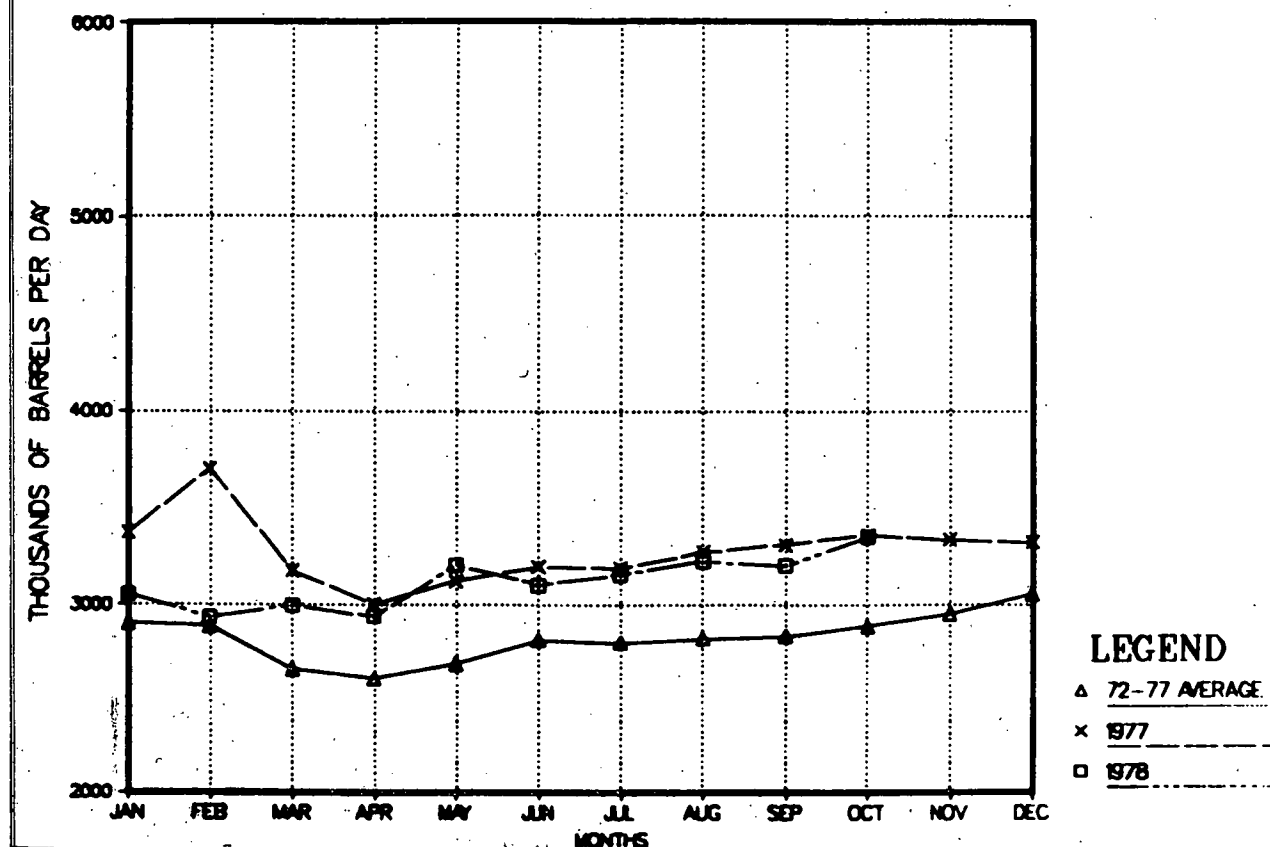
## WEEK ENDING:

|              |          |
|--------------|----------|
| NOV 3, 1978  | 217,637* |
| NOV 10, 1978 | 217,986* |
| NOV 17, 1978 | 222,719* |
| NOV 24, 1978 | 224,906* |

SOURCE DATA: BOM/DOE

\*- BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## MIDDLE DISTILLATE PRODUCTION



## MIDDLE DISTILLATE PRODUCTION

|           | AVERAGE<br>1972-1977 | 1977  | 1978   |
|-----------|----------------------|-------|--------|
| JANUARY   | 2,901                | 3,375 | 3,055  |
| FEBRUARY  | 2,888                | 3,701 | 2,937  |
| MARCH     | 2,660                | 3,179 | 2,999  |
| APRIL     | 2,609                | 3,002 | 2,940  |
| MAY       | 2,688                | 3,124 | 3,208  |
| JUNE      | 2,815                | 3,198 | 3,105  |
| JULY      | 2,802                | 3,193 | 3,161* |
| AUGUST    | 2,823                | 3,275 | 3,228* |
| SEPTEMBER | 2,844                | 3,315 | 3,205* |
| OCTOBER   | 2,906                | 3,364 | 3,353* |
| NOVEMBER  | 2,955                | 3,339 |        |
| DECEMBER  | 3,060                | 3,324 |        |

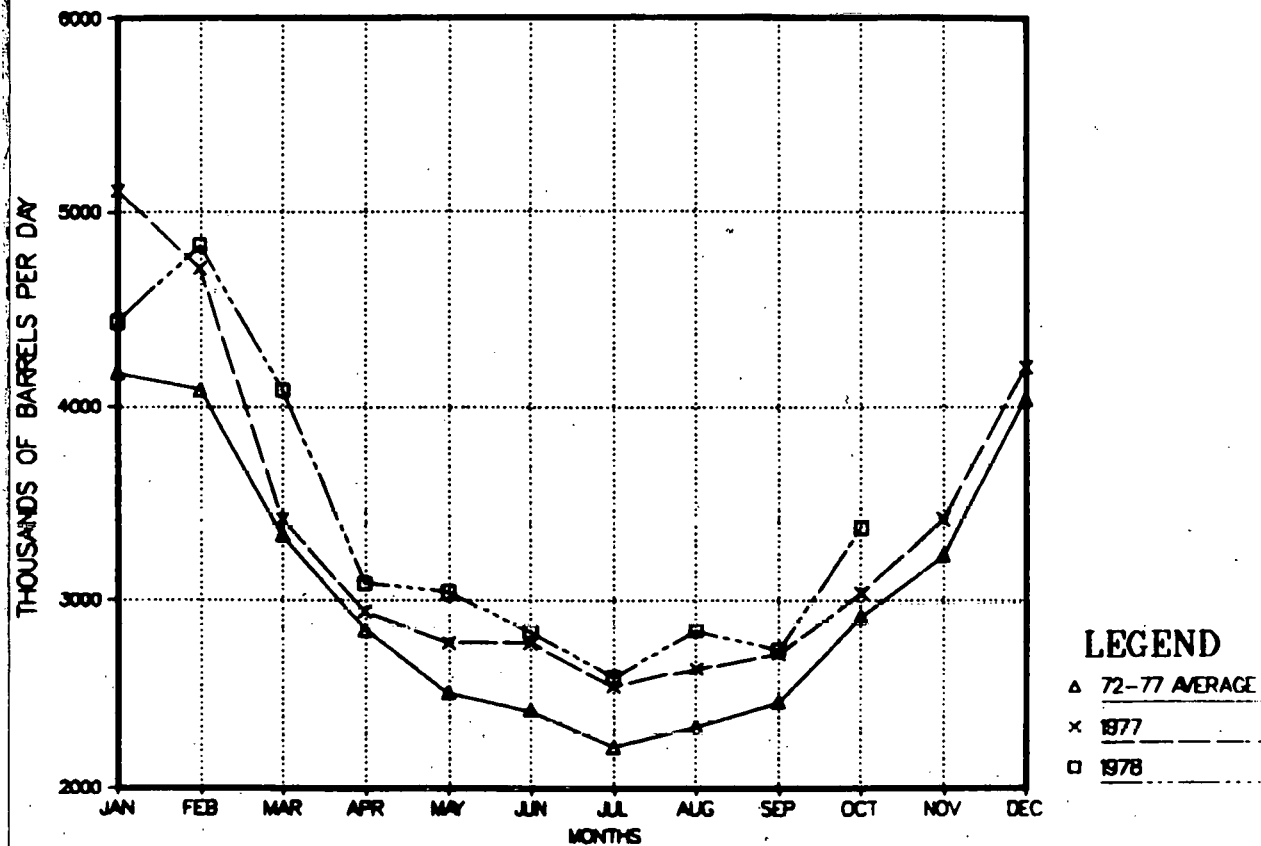
## WEEK ENDING:

|              |        |
|--------------|--------|
| NOV 3, 1978  | 3,388* |
| NOV 10, 1978 | 3,334* |
| NOV 17, 1978 | 3,246* |
| NOV 24, 1978 | 3,376* |

SOURCE DATA: BOM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## DEMAND FOR MIDDLE DISTILLATE



## DEMAND FOR MIDDLE DISTILLATE

|           | AVERAGE<br>1972-1977 | 1977  | 1978    |
|-----------|----------------------|-------|---------|
| JANUARY   | 4,176                | 5,111 | 4,439   |
| FEBRUARY  | 4,088                | 4,714 | 4,831   |
| MARCH     | 3,339                | 3,421 | 4,089   |
| APRIL     | 2,848                | 2,942 | 3,092   |
| MAY       | 2,509                | 2,777 | 3,044   |
| JUNE      | 2,411                | 2,776 | 2,837   |
| JULY      | 2,219                | 2,545 | 2,594*  |
| AUGUST    | 2,329                | 2,635 | 2,843*  |
| SEPTEMBER | 2,461                | 2,717 | 2,739*R |
| OCTOBER   | 2,887                | 3,038 | 3,378*  |
| NOVEMBER  | 3,288                | 3,420 |         |
| DECEMBER  | 4,071                | 4,205 |         |

## WEEK ENDING:

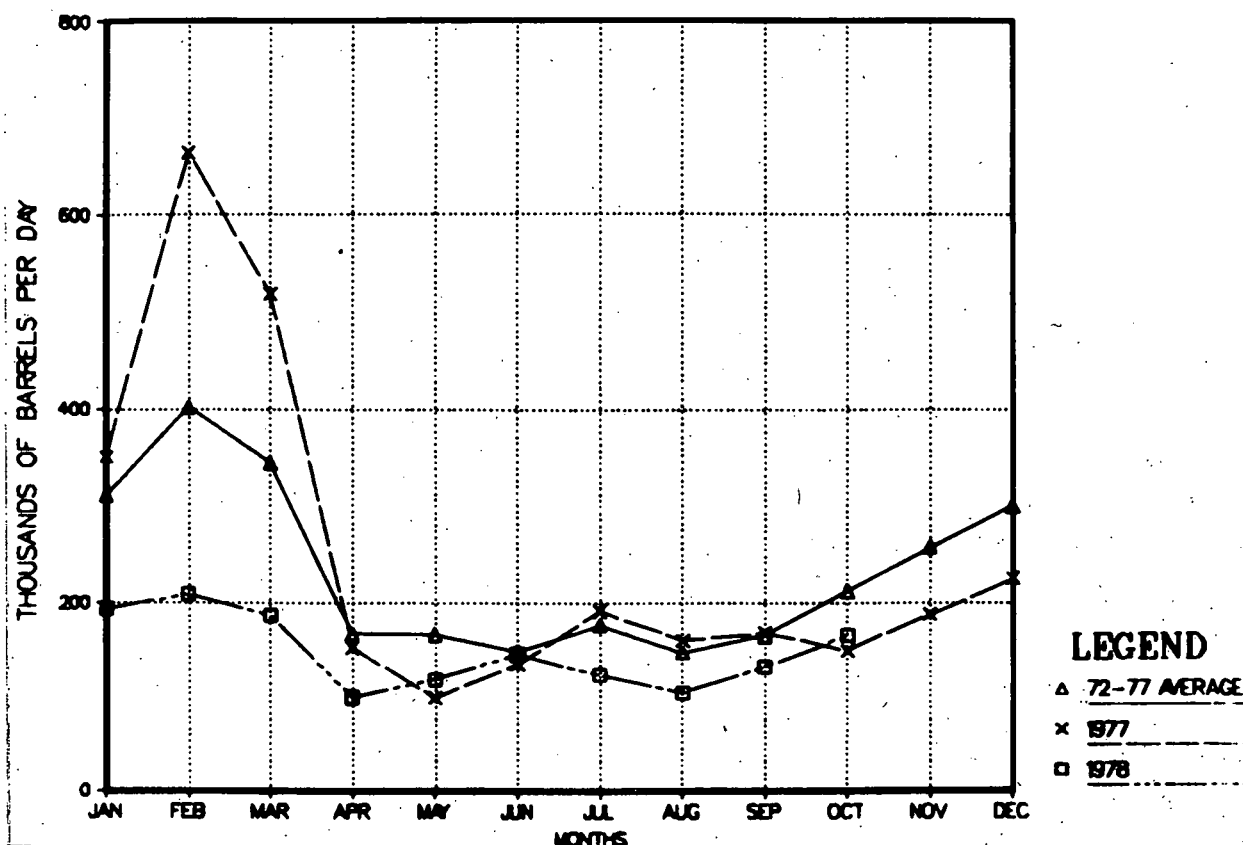
|              |        |
|--------------|--------|
| NOV 3, 1978  | 3,281* |
| NOV 10, 1978 | 3,479* |
| NOV 17, 1978 | 2,762* |
| NOV 24, 1978 | 3,216* |

SOURCE DATA: BOM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.



## MIDDLE DISTILLATE IMPORTS



## MIDDLE DISTILLATE IMPORTS

|           | AVERAGE<br>1972-1977 | 1977 | 1978 |
|-----------|----------------------|------|------|
| JANUARY   | 312                  | 350  | 194  |
| FEBRUARY  | 404                  | 664  | 209  |
| MARCH     | 346                  | 519  | 187  |
| APRIL     | 168                  | 153  | 100  |
| MAY       | 167                  | 99   | 119  |
| JUNE      | 149                  | 135  | 146  |
| JULY      | 176                  | 192  | 124* |
| AUGUST    | 148                  | 161  | 105* |
| SEPTEMBER | 169                  | 169  | 133* |
| OCTOBER   | 215                  | 150  | 166* |
| NOVEMBER  | 265                  | 188  |      |
| DECEMBER  | 316                  | 226  |      |

## WEEK ENDING:

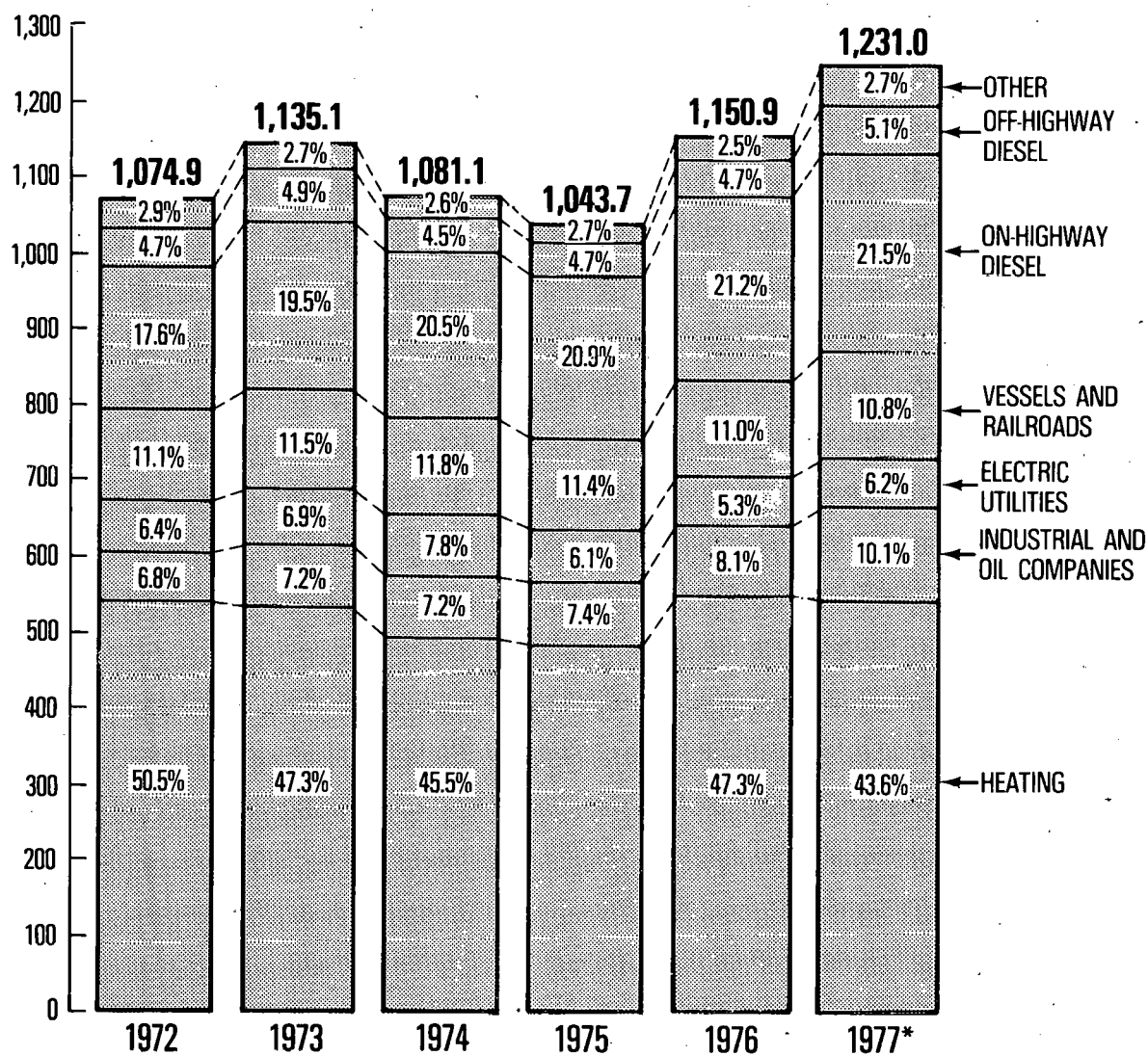
|              |      |
|--------------|------|
| NOV 3, 1978  | 186* |
| NOV 10, 1978 | 197* |
| NOV 17, 1978 | 194* |
| NOV 24, 1978 | 154* |

SOURCE DATA: BOM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

NOV 81

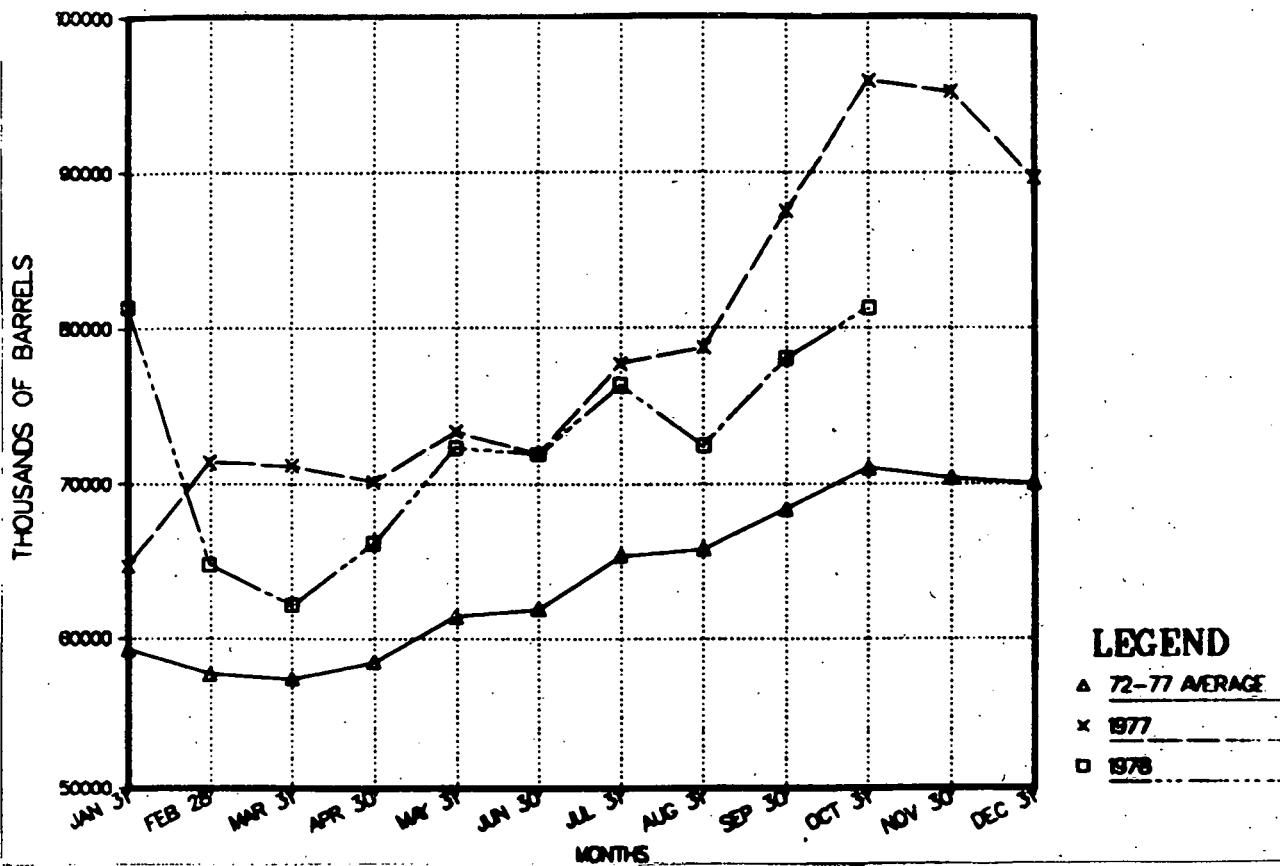
# SALES OF DISTILLATE FUEL OIL BY USE AS PERCENT OF TOTAL MILLIONS OF BARRELS



Source: ROM/EIA \*Preliminary

Distillate Fuel Oil Includes No. 4

## RESIDUAL FUEL STOCKS



## RESIDUAL FUEL STOCKS

|           | AVERAGE<br>1972-1977 | 1977   | 1978    |
|-----------|----------------------|--------|---------|
| JANUARY   | 59,286               | 64,749 | 81,434  |
| FEBRUARY  | 57,620               | 71,414 | 64,852  |
| MARCH     | 57,328               | 71,186 | 62,187  |
| APRIL     | 58,462               | 70,165 | 66,229  |
| MAY       | 61,437               | 73,376 | 72,359  |
| JUNE      | 61,945               | 71,924 | 71,916  |
| JULY      | 65,415               | 77,770 | 76,392* |
| AUGUST    | 65,847               | 78,762 | 72,508* |
| SEPTEMBER | 69,988               | 87,522 | 78,095* |
| OCTOBER   | 72,379               | 95,896 | 81,345* |
| NOVEMBER  | 70,270               | 95,155 |         |
| DECEMBER  | 67,422               | 89,673 |         |

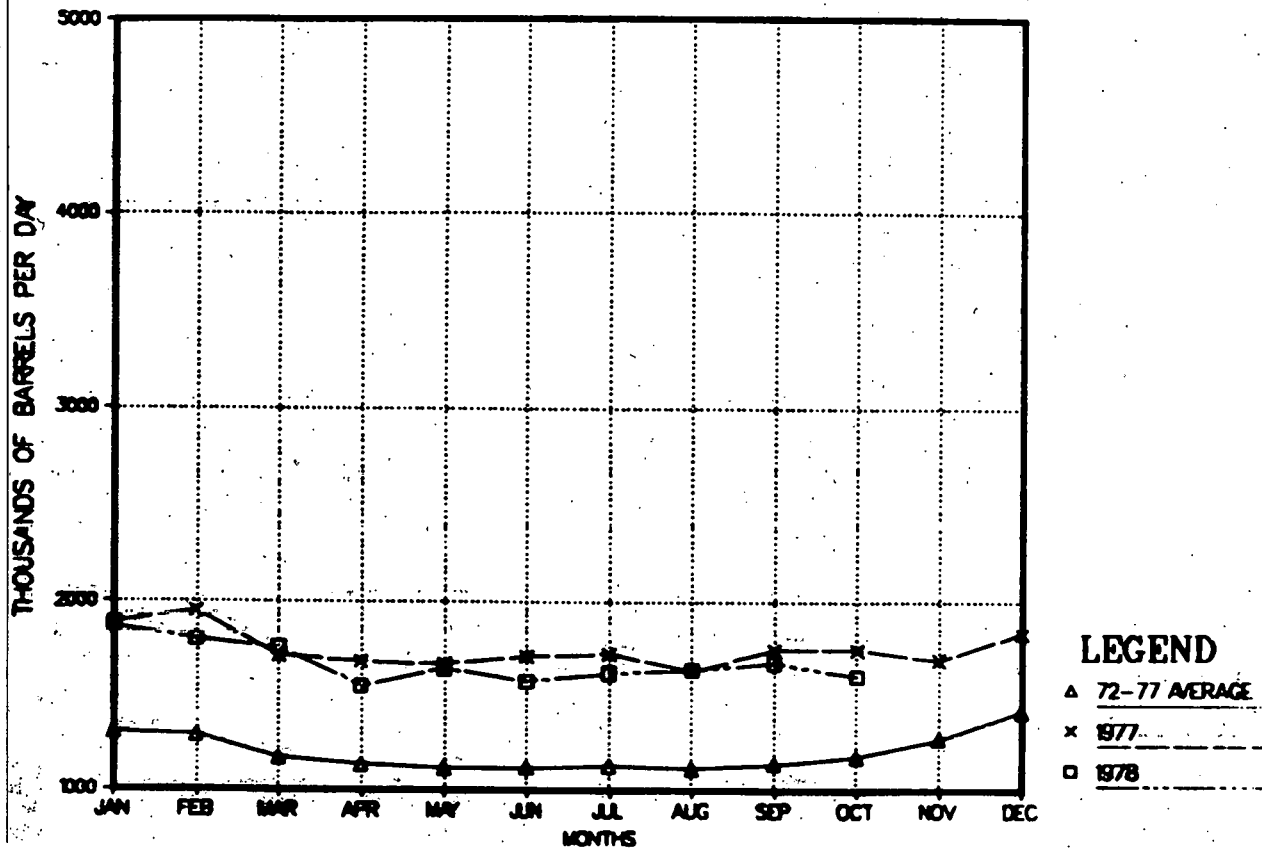
## WEEK ENDING:

|              |         |
|--------------|---------|
| NOV 3, 1978  | 81,223* |
| NOV 10, 1978 | 83,033* |
| NOV 17, 1978 | 84,446* |
| NOV 24, 1978 | 84,292* |

SOURCE DATA: BOM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## RESIDUAL FUEL PRODUCTION



## RESIDUAL FUEL PRODUCTION

|           | AVERAGE<br>1972-1977 | 1977  | 1978   |
|-----------|----------------------|-------|--------|
| JANUARY   | 1,305                | 1,889 | 1,872  |
| FEBRUARY  | 1,288                | 1,951 | 1,801  |
| MARCH     | 1,170                | 1,715 | 1,758  |
| APRIL     | 1,136                | 1,687 | 1,554  |
| MAY       | 1,114                | 1,671 | 1,646  |
| JUNE      | 1,118                | 1,714 | 1,582  |
| JULY      | 1,127                | 1,729 | 1,625* |
| AUGUST    | 1,116                | 1,634 | 1,640* |
| SEPTEMBER | 1,147                | 1,750 | 1,681* |
| OCTOBER   | 1,182                | 1,749 | 1,606* |
| NOVEMBER  | 1,278                | 1,695 |        |
| DECEMBER  | 1,430                | 1,839 |        |

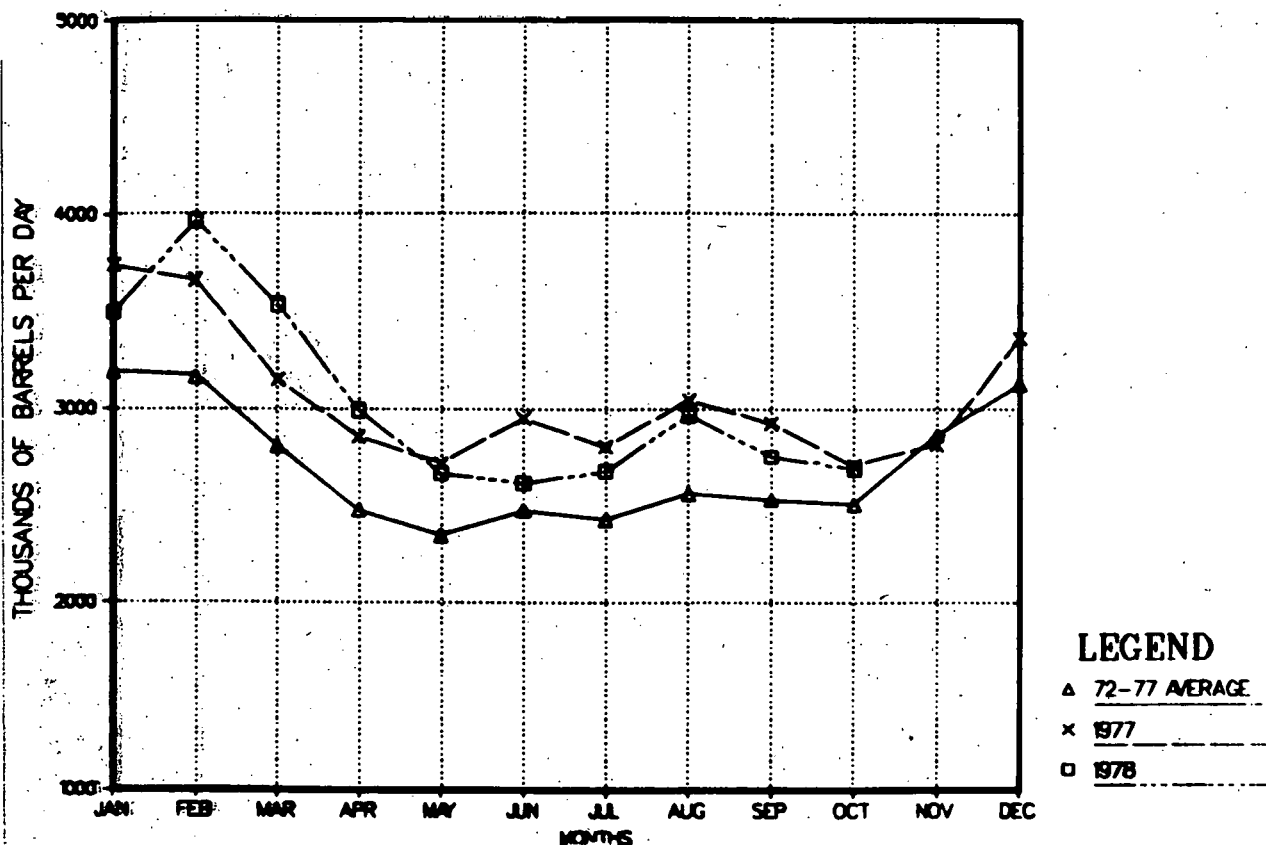
## WEEK ENDING:

|              |        |
|--------------|--------|
| NOV 3, 1978  | 1,588* |
| NOV 10, 1978 | 1,654* |
| NOV 17, 1978 | 1,728* |
| NOV 24, 1978 | 1,670* |

SOURCE DATA: BOM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## RESIDUAL FUEL DEMAND



## DEMAND FOR RESIDUAL FUEL

|           | AVERAGE<br>1972-1977 | 1977  | 1978    |
|-----------|----------------------|-------|---------|
| JANUARY   | 3,211                | 3,741 | 3,496   |
| FEBRUARY  | 3,189                | 3,662 | 3,964   |
| MARCH     | 2,820                | 3,150 | 3,536   |
| APRIL     | 2,490                | 2,855 | 2,992   |
| MAY       | 2,356                | 2,719 | 2,667   |
| JUNE      | 2,475                | 2,954 | 2,618   |
| JULY      | 2,428                | 2,806 | 2,681*  |
| AUGUST    | 2,570                | 3,046 | 2,969*  |
| SEPTEMBER | 2,528                | 2,926 | 2,754** |
| OCTOBER   | 2,514                | 2,707 | 2,691*  |
| NOVEMBER  | 2,902                | 2,818 |         |
| DECEMBER  | 3,167                | 3,364 |         |

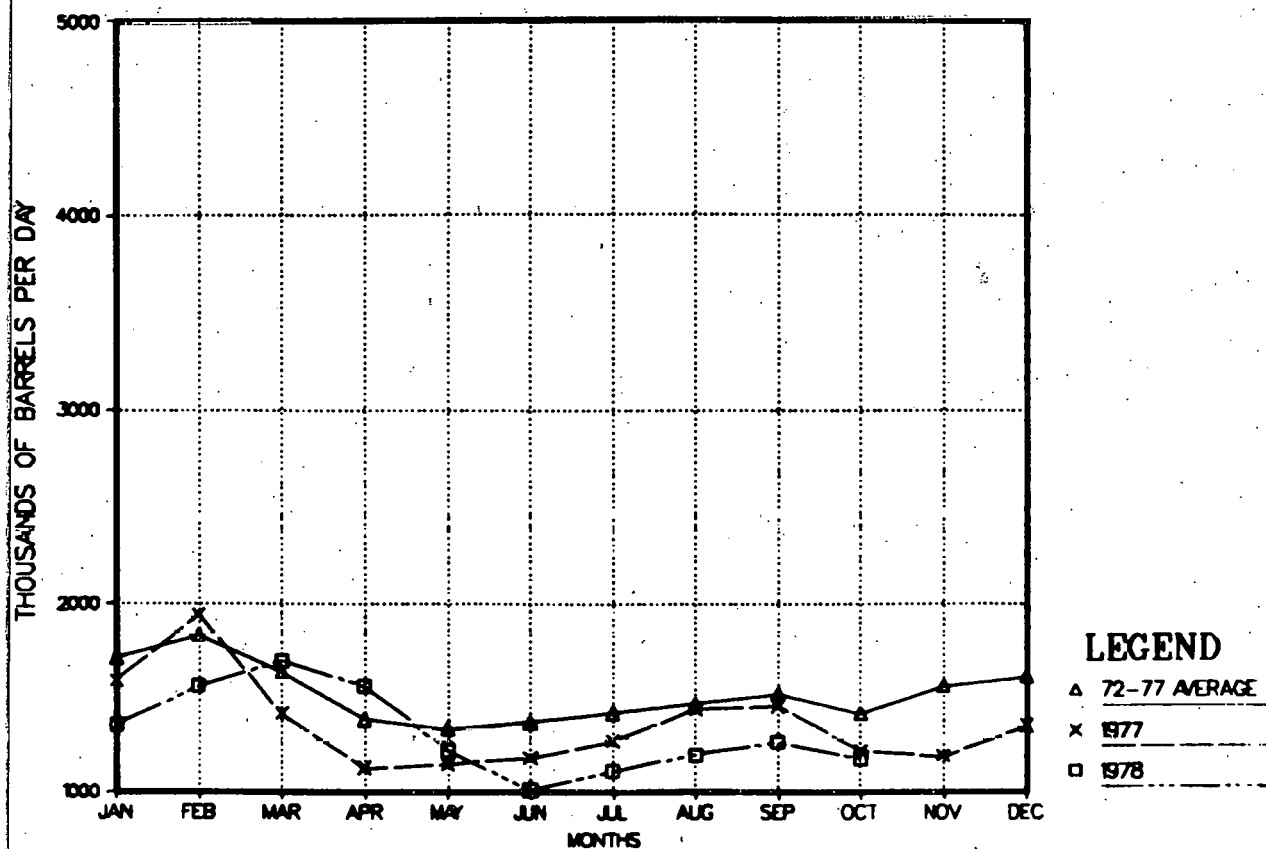
## WEEK ENDING:

|              |        |
|--------------|--------|
| NOV 3, 1978  | 2,726* |
| NOV 10, 1978 | 2,488* |
| NOV 17, 1978 | 2,725* |
| NOV 24, 1978 | 3,042* |

SOURCE DATA: BDM/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

## RESIDUAL FUEL IMPORTS



## RESIDUAL FUEL IMPORTS

|           | AVERAGE<br>1972-1977 | 1977  | 1978   |
|-----------|----------------------|-------|--------|
| JANUARY   | 1,725                | 1,596 | 1,358  |
| FEBRUARY  | 1,849                | 1,943 | 1,565  |
| MARCH     | 1,648                | 1,417 | 1,700  |
| APRIL     | 1,402                | 1,125 | 1,565  |
| MAY       | 1,340                | 1,145 | 1,221  |
| JUNE      | 1,370                | 1,181 | 1,012  |
| JULY      | 1,419                | 1,271 | 1,111* |
| AUGUST    | 1,476                | 1,441 | 1,147* |
| SEPTEMBER | 1,519                | 1,458 | 1,264* |
| OCTOBER   | 1,408                | 1,218 | 1,179* |
| NOVEMBER  | 1,549                | 1,094 |        |
| DECEMBER  | 1,647                | 1,348 |        |

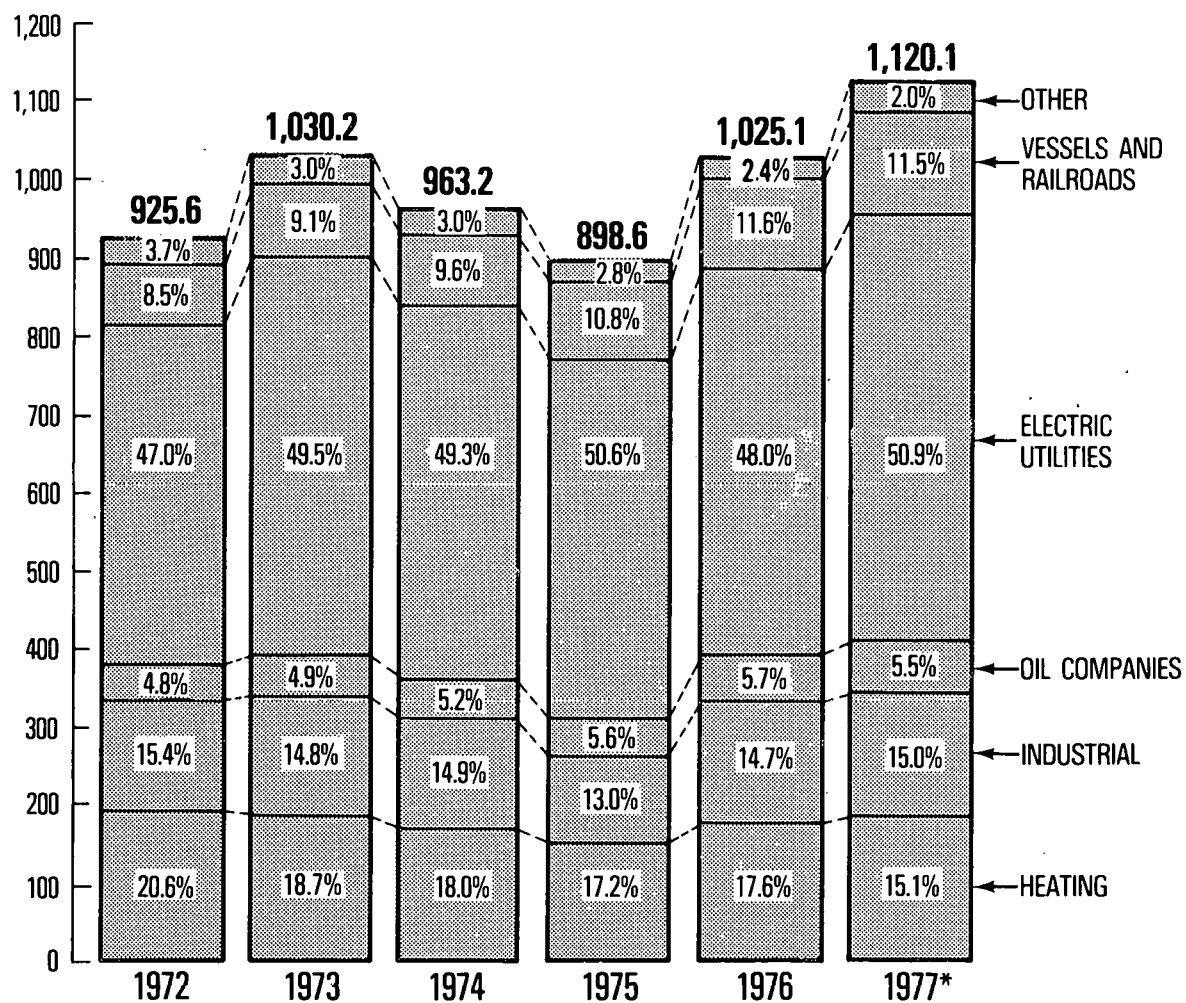
## WEEK ENDING:

|              |        |
|--------------|--------|
| NOV 3, 1978  | 1,066* |
| NOV 10, 1978 | 1,088* |
| NOV 17, 1978 | 1,194* |
| NOV 24, 1978 | 1,345* |

SOURCE DATA: BOP/DOE

\*\* BASED ON API STATISTICS. TO BE REPLACED  
WITH FINAL DOE DATA AS AVAILABLE.

# SALES OF RESIDUAL FUEL OIL BY USE AS PERCENT OF TOTAL MILLIONS OF BARRELS



Source: BOM/EIA

\*Preliminary

FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF PIPELINE AND PRODUCER REGULATION  
DIVISION OF CURTAILMENTS AND PIPELINE SYSTEM ANALYSIS  
SYSTEMS ANALYSIS BRANCH

HEATING SEASON DEGREE DAY INFORMATION

PAD ONE

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 275    | 303                                               | 409     | 343     | 48.7                          | 24.6    | 35.048                                               | 3.066   | 17.210  |
| NOVEMBER | 552    | 607                                               | 716     | 502     | 29.7                          | -9.0    | 23.957                                               | 1.775   | 73.823  |
| DECEMBER | 868    | 955                                               | 1026    | 921     | 18.2                          | 6.1     | 21.429                                               | 7.480   | 31.598  |
| JANUARY  | 950    | 1045                                              | 1281    | 1067    | 34.8                          | 12.3    | 24.396                                               | 0.783   | 19.703  |
| FEBRUARY | 832    | 915                                               | 863     | 997     | 3.7                           | 19.8    | 20.665                                               | 38.025  | 5.263   |
| MARCH    | 694    | 763                                               | 552     | 695     | -20.5                         | 0.1     | 24.360                                               | 92.242  | 49.522  |

PAD TWO

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 331    | 364                                               | 528     | 420     | 59.5                          | 26.8    | 32.884                                               | 0.418   | 11.755  |
| NOVEMBER | 720    | 792                                               | 941     | 699     | 30.7                          | -2.9    | 18.101                                               | 0.257   | 60.375  |
| DECEMBER | 1080   | 1188                                              | 1296    | 1192    | 20.0                          | 10.4    | 15.104                                               | 2.383   | 15.120  |
| JANUARY  | 1203   | 1323                                              | 1647    | 1469    | 36.9                          | 22.1    | 20.699                                               | 0.128   | 3.538   |
| FEBRUARY | 1010   | 1111                                              | 1024    | 1313    | 1.4                           | 30.0    | 17.722                                               | 44.893  | 0.270   |
| MARCH    | 836    | 920                                               | 657     | 917     | -21.4                         | 9.7     | 22.859                                               | 94.430  | 23.478  |

PAD THREE

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 68     | 75                                                | 184     | 95      | 170.6                         | 39.4    | 46.693                                               | 7.844   | 37.190  |
| NOVEMBER | 258    | 284                                               | 434     | 268     | 58.2                          | 4.0     | 39.090                                               | 2.942   | 45.620  |
| DECEMBER | 434    | 477                                               | 536     | 504     | 23.5                          | 16.1    | 36.736                                               | 21.291  | 29.315  |
| JANUARY  | 498    | 548                                               | 742     | 834     | 49.0                          | 67.5    | 37.052                                               | 5.270   | 1.285   |
| FEBRUARY | 373    | 410                                               | 385     | 676     | 3.2                           | 81.1    | 37.062                                               | 45.770  | 0.370   |
| MARCH    | 262    | 288                                               | 232     | 310     | -11.5                         | 18.2    | 42.559                                               | 58.505  | 36.658  |



FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF PIPELINE AND PRODUCER REGULATION  
DIVISION OF CURTAILMENTS AND PIPELINE SYSTEM ANALYSIS  
SYSTEMS ANALYSIS BRANCH

HEATING SEASON DEGREE DAY INFORMATION

PAD FOUR

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES |         |         |
|----------|--------|--------------------------------------------|---------|---------|-------------------------------|---------|-----------------------------------------------|---------|---------|
|          |        | 10%<br>COLDER                              | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | 10%<br>COLDER                                 | 1976-77 | 1977-78 |
| OCTOBER  | 508    | 559                                        | 615     | 498     | 21.1                          | -2.0    | 26.890                                        | 9.719   | 54.825  |
| NOVEMBER | 886    | 975                                        | 888     | 882     | 0.2                           | -0.5    | 17.120                                        | 49.145  | 51.828  |
| DECEMBER | 1153   | 1268                                       | 1135    | 1097    | -1.6                          | -4.9    | 17.808                                        | 55.727  | 67.299  |
| JANUARY  | 1253   | 1378                                       | 1343    | 1145    | 7.2                           | -8.7    | 20.184                                        | 27.432  | 76.497  |
| FEBRUARY | 1017   | 1119                                       | 928     | 969     | -8.8                          | -4.7    | 21.593                                        | 75.422  | 64.500  |
| MARCH    | 932    | 1025                                       | 962     | 629     | 3.2                           | -32.6   | 26.656                                        | 42.050  | 97.879  |

PAD FIVE

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES |         |         |
|----------|--------|--------------------------------------------|---------|---------|-------------------------------|---------|-----------------------------------------------|---------|---------|
|          |        | 10%<br>COLDER                              | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | 10%<br>COLDER                                 | 1976-77 | 1977-78 |
| OCTOBER  | 188    | 207                                        | 169     | 158     | -10.1                         | -16.0   | 33.392                                        | 66.774  | 75.410  |
| NOVEMBER | 424    | 466                                        | 339     | 339     | -20.0                         | -20.0   | 23.670                                        | 92.468  | 92.369  |
| DECEMBER | 625    | 688                                        | 596     | 441     | -4.6                          | -29.4   | 26.880                                        | 61.257  | 96.512  |
| JANUARY  | 683    | 751                                        | 681     | 376     | -0.3                          | -45.0   | 29.493                                        | 50.630  | 99.234  |
| FEBRUARY | 530    | 583                                        | 419     | 336     | -20.9                         | -36.5   | 29.090                                        | 87.564  | 97.793  |
| MARCH    | 485    | 534                                        | 366     | 232     | -24.5                         | -52.1   | 30.026                                        | 90.057  | 99.681  |

NATIONAL

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES |         |         |
|----------|--------|--------------------------------------------|---------|---------|-------------------------------|---------|-----------------------------------------------|---------|---------|
|          |        | 10%<br>COLDER                              | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | 10%<br>COLDER                                 | 1976-77 | 1977-78 |
| OCTOBER  | 263    | 289                                        | 394     | 317     | 49.8                          | 20.7    | 28.430                                        | 0.226   | 11.948  |
| NOVEMBER | 563    | 619                                        | 709     | 526     | 25.9                          | -6.5    | 14.879                                        | 0.345   | 75.213  |
| DECEMBER | 860    | 946                                        | 1000    | 899     | 16.3                          | 4.5     | 14.723                                        | 4.394   | 31.727  |
| JANUARY  | 951    | 1046                                       | 1257    | 1078    | 32.2                          | 13.3    | 16.793                                        | 0.098   | 9.983   |
| FEBRUARY | 799    | 879                                        | 800     | 971     | 0.1                           | 21.5    | 15.283                                        | 49.488  | 1.371   |
| MARCH    | 667    | 734                                        | 561     | 657     | -15.9                         | -1.4    | 22.318                                        | 88.690  | 54.378  |

FEDERAL ENERGY REGULATORY COMMISSION  
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DIVISION OF CURTAILMENTS AND PIPELINE SYSTEM ANALYSIS  
SYSTEMS ANALYSIS BRANCH

HEATING SEASON DEGREE DAY INFORMATION  
\*\*\* CUMULATIVE DATA \*\*\*

PAD ONE

|          | NORMAL | POPULATION WEIGHED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|--------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                           | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 275    | 303                                              | 409     | 343     | 48.7                          | 24.6    | 35.048                                               | 3.066   | 17.210  |
| NOVEMBER | 827    | 910                                              | 1125    | 845     | 36.0                          | 2.2     | 21.739                                               | 0.244   | 43.258  |
| DECEMBER | 1695   | 1865                                             | 2151    | 1765    | 26.9                          | 4.2     | 13.307                                               | 0.139   | 32.186  |
| JANUARY  | 2645   | 2910                                             | 3432    | 2832    | 29.8                          | 7.1     | 9.840                                                | 0.006   | 18.045  |
| FEBRUARY | 3477   | 3825                                             | 4295    | 3829    | 23.5                          | 10.1    | 6.427                                                | 0.017   | 6.196   |
| MARCH    | 4171   | 4588                                             | 4847    | 4524    | 16.2                          | 8.5     | 4.737                                                | 0.338   |         |

PAD TWO

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 331    | 364                                               | 528     | 420     | 59.5                          | 26.8    | 32.884                                               | 0.418   | 11.755  |
| NOVEMBER | 1051   | 1156                                              | 1469    | 1119    | 39.8                          | 6.5     | 16.634                                               | 0.006   | 26.608  |
| DECEMBER | 2131   | 2344                                              | 2765    | 2311    | 29.8                          | 8.5     | 8.321                                                | 0.002   | 12.071  |
| JANUARY  | 3334   | 3667                                              | 4412    | 3781    | 32.3                          | 13.4    | 5.883                                                | 0.000   | 1.806   |
| FEBRUARY | 4344   | 4778                                              | 5436    | 5094    | 25.1                          | 17.3    | 3.478                                                | 0.000   | 0.086   |
| MARCH    | 5180   | 5698                                              | 6093    | 6011    | 17.6                          | 16.0    | 2.507                                                | 0.028   |         |

PAD THREE

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 68     | 75                                                | 184     | 95      | 100.6                         | 39.4    | 46.693                                               | 7.844   | 37.190  |
| NOVEMBER | 326    | 359                                               | 518     | 363     | 89.6                          | 11.4    | 39.636                                               | 0.929   | 38.267  |
| DECEMBER | 760    | 836                                               | 1154    | 867     | 51.8                          | 14.0    | 33.497                                               | 1.357   | 27.474  |
| JANUARY  | 1258   | 1384                                              | 1396    | 1701    | 50.7                          | 35.2    | 29.499                                               | 0.314   | 2.891   |
| FEBRUARY | 1631   | 1794                                              | 2281    | 2376    | 39.9                          | 45.7    | 26.471                                               | 0.610   | 0.203   |
| MARCH    | 1893   | 2082                                              | 2513    | 2686    | 32.8                          | 41.9    | 26.022                                               | 1.765   |         |

FEDERAL ENERGY REGULATORY COMMISSION  
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HEATING SEASON DEGREE DAY INFORMATION  
\*\*\* CUMULATIVE DATA \*\*\*

PAD FOUR

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 508    | 559                                               | 615     | 498     | 21.1                          | -2.0    | 26.890                                               | 9.719   | 54.825  |
| NOVEMBER | 1394   | 1533                                              | 1503    | 1380    | 7.8                           | -1.0    | 13.147                                               | 19.070  | 54.563  |
| DECEMBER | 2547   | 2802                                              | 2638    | 2477    | 3.6                           | -2.8    | 7.440                                                | 30.298  | 65.482  |
| JANUARY  | 3800   | 4180                                              | 3981    | 3621    | 4.8                           | -4.7    | 5.042                                                | 21.724  | 77.979  |
| FEBRUARY | 4817   | 5299                                              | 4909    | 4590    | 1.9                           | -4.7    | 3.470                                                | 36.437  | 80.369  |
| MARCH    | 5749   | 6324                                              | 5871    | 5220    | 2.1                           | -9.2    | 2.953                                                | 34.435  |         |

PAD FIVE

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 188    | 207                                               | 169     | 158     | -10.1                         | -16.0   | 33.392                                               | 66.774  | 75.410  |
| NOVEMBER | 612    | 673                                               | 508     | 497     | -17.0                         | -18.7   | 20.284                                               | 92.118  | 94.045  |
| DECEMBER | 1237   | 1361                                              | 1104    | 938     | -10.8                         | -24.1   | 16.174                                               | 85.578  | 99.142  |
| JANUARY  | 1920   | 2112                                              | 1785    | 1314    | -7.0                          | -31.6   | 14.063                                               | 77.566  | 99.966  |
| FEBRUARY | 2450   | 2695                                              | 2204    | 1651    | -10.0                         | -32.6   | 11.318                                               | 88.776  | 99.996  |
| MARCH    | 2935   | 3229                                              | 2570    | 1883    | -12.4                         | -36.0   | 9.376                                                | 94.940  |         |

NATIONAL

|          | NORMAL | POPULATION WEIGHTED<br>HEATING DEGREE DAYS<br>10% |         |         | PERCENT COLDER<br>THAN NORMAL |         | PERCENT PROBABILITY<br>OF COLDER TEMPERATURES<br>10% |         |         |
|----------|--------|---------------------------------------------------|---------|---------|-------------------------------|---------|------------------------------------------------------|---------|---------|
|          |        | COLDER                                            | 1976-77 | 1977-78 | 1976-77                       | 1977-78 | COLDER                                               | 1976-77 | 1977-78 |
| OCTOBER  | 263    | 289                                               | 394     | 317     | 49.8                          | 20.7    | 28.430                                               | 7.226   | 11.948  |
| NOVEMBER | 826    | 909                                               | 1103    | 844     | 33.5                          | 2.1     | 12.253                                               | 0.005   | 40.272  |
| DECEMBER | 1686   | 1855                                              | 2103    | 1742    | 24.7                          | 3.4     | 6.015                                                | 0.006   | 30.133  |
| JANUARY  | 2637   | 2901                                              | 3360    | 2820    | 27.4                          | 6.9     | 3.620                                                | 0.000   | 10.594  |
| FEBRUARY | 3436   | 3780                                              | 4160    | 3791    | 21.1                          | 10.3    | 1.936                                                | 0.001   | 1.628   |
| MARCH    | 4103   | 4513                                              | 4721    | 4448    | 15.1                          | 8.4     | 1.449                                                | 0.050   |         |

DOE NATIONAL, DOE REGIONAL, AND  
STATE RESPONSIBILITIES UNDER  
THE MANDATORY PETROLEUM ALLOCATION PROGRAM

NATIONAL, REGIONAL, AND STATE RESPONSIBILITIES UNDER  
THE MANDATORY PETROLEUM ALLOCATION PROGRAM

The DOE/ERA national office deals primarily with the headquarters offices of refiners and importers; DOE regional offices for fuels allocation will deal primarily with local [regional] offices of refiners and importers and with wholesale purchasers. The State offices will deal primarily with emergency and hardship situations within the regional and local distribution offices of refiners, importers, primary suppliers and wholesale purchasers within the States and, where necessary, with small end-users who are not wholesale purchasers.

The NATIONAL headquarters of the DOE is responsible for the following functions:

(a) Setting policy for case resolution accomplished in regional offices, including compliance, application verification, and investigations.

(b) The administration and issuance of allocation orders for the following programs:

- (1) Crude oil.
- (2) Refinery yield.
- (3) Allocation of refined petroleum products. 1/
- (4) Residual fuel for utilities. 1/
- (5) Bunker fuel for maritime shipping. 1/
- (6) Aviation fuel for Civil Air Carriers.

(c) The determination of state set aside percentages.

(d) The determination of allocation levels for priority customers.

1/ Some products are currently exempt from allocation and price regulations. Such regulations may be reimposed if necessary.

(e) Monitoring industry actions to redistribute fuels regionally (between states) to correct for regional imbalances, changes in weather, seasonality, etc.

(f) Directing, where necessary, redistribution of fuels regionally to correct for regional imbalances, changes in weather, seasonality, etc.

(g) Coordination with State offices, regional offices, and industry in assessing national, regional and State stock levels for all fuels.

(h) The dissemination of information on fuel inventories and supply projections.

All of the programs administered by the national office of the DOE involve a limited number of participants in the private sector as compared to the programs administered by the regional offices which involve pervasive distribution systems affecting virtually every American. Complaints and adjustments must be processed by the national office of the DOE for these programs. Appeals for these programs will be processed by the Office of Hearings and Appeals of the DOE.

The 10 REGIONAL Offices of the DOE will be responsible for the following functions:

(a) The resolution of cases and administration of the following programs:

- (1) Middle distillates 2/
- (2) Motor gasoline
- (3) Residual fuel oil (except that used for utilities or as bunker fuel) 2/
- (4) Aviation fuel (except Civil Air Carriers)
- (5) Propane

(b) The implementation of compliance and enforcement efforts within the region.

(c) The implementation of auditing, application verification, and investigation procedures within the region.

(d) Coordination between DOE headquarters and State offices.

2/ Currently exempt from regulation

For each of these programs administered by the regional offices of the DOE except aviation fuel, there is a state set-aside.

The STATE Offices will be responsible for:

(a) The allocation of the State set-aside in resolving emergencies and hardships. The State set-aside is a percentage (Three (3) percent for propane) of the total supply of allocated products under the state set-aside program for any product for which a state set-aside is established. The set-aside will be taken from all refined and imported supplies of a refiner or importer. It cannot be accumulated or deferred. It is made available to the States for hardships and emergencies from working stocks of refiners, importers, suppliers, and wholesale purchasers. End-users or wholesale purchasers which receive an allocation from the state set-aside by state offices will be directed to their customary suppliers, where practicable, or to another supplier to receive the allocated fuels. Copies of the allocation order from the state will be provided to the end-users or wholesale purchasers receiving the allocation, the supplier providing the fuel, and to the regional or local offices of the prime supplier. The state office may issue allocation orders monthly for each refiner, importer, or other primary supplier reporting under the state set aside system not to exceed the total gallonage set aside. Any unused set aside may not be carried forward by the state office, but will be automatically redistributed by the importer, refiner, or other primary supplier. Neither the regional office nor the national office of the DOE have any major involvement in the state set aside system other than the determination of the state set aside percentage by the national office of DOE.

(b) Advising the DOE regional office and headquarters of problems within the state including problems associated with applications to DOE for allocations which have required hardship allocations by the States.

SUGGESTED STEPS FOR CONSUMERS  
NEEDING ALTERNATE FUELS IN A NATURAL  
GAS CURTAILMENT SITUATION  
(1978-79 HEATING SEASON)



SUGGESTED STEPS FOR CONSUMERS NEEDING  
ALTERNATE FUELS IN A NATURAL  
GAS CURTAILMENT SITUATION  
(1978-79 HEATING SEASON)

Any individual or firm that suffers a curtailment of natural gas supplies must first determine if an alternate fuel can be used. The following general suggestions apply for those individuals or firms with an alternate fuel capability.

I. Middle Distillate and Residual Fuels as alternate fuels

Since middle distillate and residual fuels are not subject to the Mandatory Petroleum Allocation Regulations (MPAR) other than on a standby basis such allocation controls are not discussed herein. In the event a serious fuel shortage were to develop allocation controls can be reimplemented by the President.

A. Contact local distributors and suppliers to ascertain if the required volumes can be obtained through normal supply channels.

B. Notify the State Energy Office of requirements and problems when efforts to obtain supplies through normal channels are not successful.

C. Since State Energy Offices have no direct jurisdiction, they may attempt to persuade local distributors to provide fuel and, in turn, notify the appropriate DOE Regional Office if a problem is unresolved.

II. Propane-Butane as Alternate Fuels.

Propane, butane and mixtures thereof are subject to the MPAR. The regulations are currently being revised (see Federal Register, Vol. 42, No. 157, Monday, August 15, 1977). Therefore, portions of the following may be slightly modified, especially with respect to the acquisition and/or use of surplus domestic product or imports. For clarification or update call Bruce Starnes, (202) 254-6030.

A. Acquisition and use of Propane or Butane Imports  
(Other than from Canada)

Firms (or persons) desiring to use propane or butane in excess of the purchase and use limitations contained in 10 CFR Section 211.10(g)(8) may purchase and use propane or butane imports (other than from Canada) without receiving prior approval from the Economic Regulatory Administration (ERA) of the Department of Energy (DOE). See 10 CFR Section 211.10 (g)(8) and 10 CFR Section 211.12(g) of the MPAR.

B. Acquisition and Use of Propane or Butane from  
Domestic or Canadian Sources

1. Purchase or Use Limitation Waivers

Where the firm may be in a position to purchase domestic surplus or Canadian imports, it may request waiver of the purchase and use limitations contained in 10 CFR Section 211.10(g)(8) as opposed to requesting assignment or adjustment of a base period volume for either propane or butane. The procedure for filing for waivers is also applicable for situations where the firm may hold product in inventory but does not have a base period volume for the calendar quarters in which the product is needed to be used. These proceedings, pursuant to Subpart G of Part 205, are filed with the National Office of ERA.

The firm requesting the waiver should provide the following information:

- a. Full name of firm
- b. Complete mailing address
- c. Name of contact person(s)
- d. Telephone number(s), including area code
- e. Name, location, contact person and telephone number for each site of use for which propane and/or butane is being requested (as applicable).

Information required for processing a 211.10(g)(8) waiver request may vary with the type of case. Basically, the volumes in excess of the limitations set forth in 10 CFR 211.10(g)(8) must be justified as follows:

a. Propane and/or butane must be required in that no other alternate fuel is acceptable or available. A statement to this effect must be made by the applicant.

b. The volumes required must be in excess of 100 percent of base period volumes. State base period volumes for each calendar quarter for which waiver is requested.

c. Provide the following information for each use which requires gaseous fuel:

(1) The volume required per day for each such use.

(2) The number of days for which the propane/butane will be required, or is projected to be required.

d. State the average number of gallons required to replace one Mcf of gaseous fuel.

e. State why firm does not/cannot make use of non-Canadian imports.

f. Consequences to firm and its customers if request is denied.

g. Environmental consequences of approval/denial if any (especially for petrochemical requests and new facilities).

h. State average daily volume of natural gas required during period for which relief is requested.

i. State average volume of natural gas contracted for during waiver period (amount that would be received in non-curtailment situation).

j. Degree of curtailment, resulting loss, and therefore availability of natural gas during waiver period.

k. Information to satisfy the general filing requirements of 10 CFR Section 205.9.

## 2. Propane/Butane Assignment or Adjustment

This procedure is applicable when a firm has a notice of curtailment. It is pursuant to 10 CFR 211.12(h), and related guidelines of the MPAR. The general filing requirements of 10 CFR Section 205.9 apply. Propane petitions are filed with the appropriate DOE Regional Office for Fuels Regulation. Butane petitions are filed with the ERA National office.

The firm being curtailed should try to locate a willing supplier for the allocated product.

Any petition filed pursuant to this procedure may be documented on the form FEO-17 and should contain the following information:

- a. Full name of firm
- b. Complete mailing address
- c. Name of contact person(s)
- d. Telephone number(s), including area code
- e. Name, location, contact person and telephone number for each site of use for which propane and/or butane is being requested (as applicable).
- f. A list of the uses of natural gas for which the applicant is seeking to use propane/butane as an alternate fuel.
- g. A statement that the applicant must use propane/butane for the uses listed in c. because a clean-burning fuel is required and/or no other alternate fuel can be used by the applicant at this time.
- h. Name(s) of proposed supplier(s).
- i. Address(es), contact person(s), and telephone number(s) for the proposed supplier(s).
- j. State whether supplier(s) listed expressed willingness to supply, and the volumes of propane involved.
- k. Natural gas used during
  - (1) October, November, December - 1972 = \_\_\_\_\_ Mcf.
  - (2) January, February, March - 1973 = \_\_\_\_\_ Mcf.
- l. Expected availability of natural gas
  - (1) Fourth Quarter \_\_\_\_\_ Mcf.
  - (2) First Quarter \_\_\_\_\_ Mcf.
- m. Furnish the equivalent Btu's of Mcf's of natural gas used during the propane or butane base period where any process or end-use has been since discontinued or converted to another source of energy other than the alternate fuel being sought.

- n. Gallons of propane/butane required for each calendar quarter.
- o. Base period propane allocation
  - (1) Fourth Quarter \_\_\_\_\_ gallons.
  - (2) First Quarter \_\_\_\_\_ gallons.
- p. Letter from natural gas utility in support of any application for anticipated curtailments, giving projected curtailment data.
- q. State the average number of gallons required to replace one Mcf of gaseous fuel.
- r. State why firm does not/cannot make use of non-Canadian imports.
- s. Consequences to firm and its customers if request is denied.
- t. Environmental consequences of approval/denial if any (especially for petrochemical requests and new facilities).
- u. Information to satisfy the general filing requirements of 10 CFR Section 205.9.

The request should be filed with the regional office serving the area where the propane is to be delivered. Following are the addresses of DOE's Regional Offices for Fuels Regulation with names and telephone numbers of the contact person.

DOE REGIONAL OFFICES FOR FUELS REGULATION

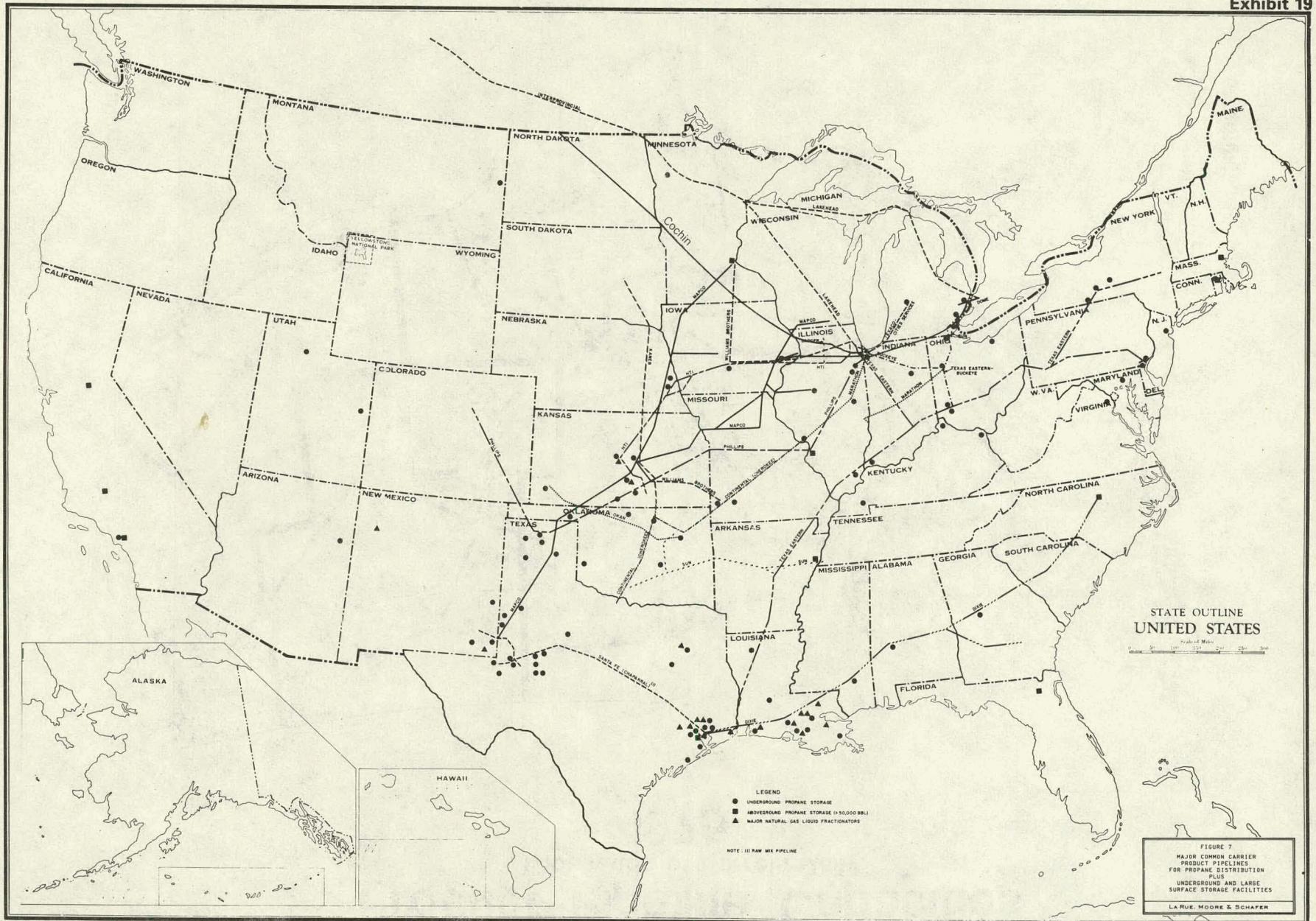
Region

|    |                                                                                            |                                  |
|----|--------------------------------------------------------------------------------------------|----------------------------------|
| I  | Mr. Arthur Shaw<br>U.S. Department of Energy<br>150 Causeway Street<br>Boston, MA 02114    | (617) 223-3705<br>FTS 8-223-3705 |
| II | Mr. Eugene Hennessy<br>U.S. Department of Energy<br>26 Federal Plaza<br>New York, NY 10007 | (212) 264-8051<br>FTS 8-264-8051 |

## Region

|      |                                                                                                   |                                  |
|------|---------------------------------------------------------------------------------------------------|----------------------------------|
| III  | Mr. Robert Tomar<br>U.S. Department of Energy<br>1421 Cherry Street<br>Philadelphia, PA 19102     | (215) 597-3915<br>FTS 8-597-3915 |
| IV   | Mr. Otis Phillips<br>U.S. Department of Energy<br>1655 Peachtree Street<br>Atlanta, GA 30309      | (404) 526-2722<br>FTS 8-257-2722 |
| V    | Mr. Raymond Fiene<br>U.S. Department of Energy<br>175 West Jackson Boulevard<br>Chicago, IL 60604 | (312) 353-3053<br>FTS 8-353-3053 |
| VI   | Mr. Edward Barrie<br>U.S. Department of Energy<br>2626 W. Mockingbird Lane<br>Dallas, TX 75235    | (214) 749-7705<br>FTS 8-749-7705 |
| VII  | Mr. Larry Myers<br>U.S. Department of Energy<br>324 East 11th Street<br>Kansas City, MO 64116     | (816) 374-2936<br>FTS 8-758-2936 |
| VIII | Mr. Harold Beetem<br>U.S. Department of Energy<br>1075 South Yukon Street<br>Lakewood, CO 80226   | (303) 234-2420<br>FTS 8-234-2596 |
| IX   | Mr. Ken Cattarin<br>U.S. Department of Energy<br>111 Pine Street<br>San Francisco, CA 94111       | (415) 556-4640<br>FTS 8-556-4640 |
| X    | Mr. Ralph Rowland<br>U.S. Department of Energy<br>915 Second Avenue<br>Seattle, WA 98174          | (206) 442-7270<br>FTS 8-399-7270 |







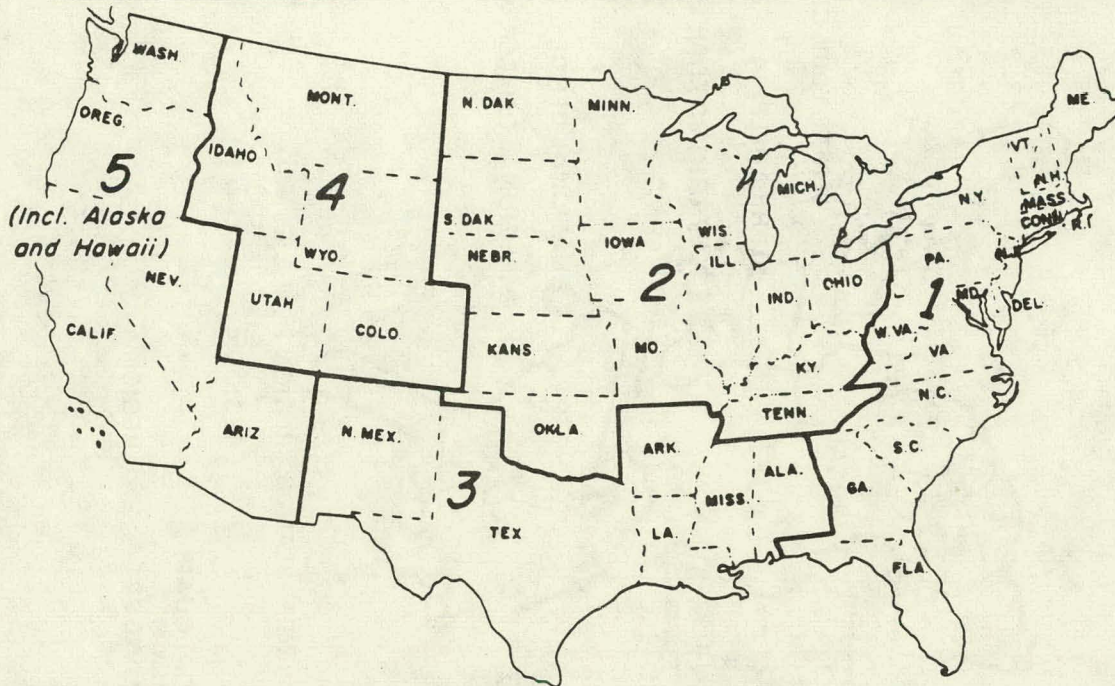
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P.A.D.District I: Connecticut, Delaware, District of Colombia, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia and West Virginia.

P.A.D.District II: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee and Wisconsin.

P.A.D.District III: Alabama, Arkansas, Louisiana, Mississippi, New Mexico and Texas.

P.A.D.District IV: Colorado, Idaho, Montana, Utah and Wyoming.

P.A.D.District V: Alaska, Arizona, California, Hawaii, Nevada, Oregon and Washington.



# DEPARTMENT OF ENERGY - REGIONS

