MASTER

**Supplement to
A Review of the Coal
and
Electric Sections in the
Monthly Energy Review
and
An Overall Review of
Office of Energy Data
Operations Publications**

**Prepared by
The MAXIMA Corporation**

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April 1981**

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Introduction

This mock-up of the electric utilities section of the Monthly Energy Review (MER) is a supplement to MAXIMA's report, "Review of the Coal and Electric Sections in the Monthly Energy Review and an Overall Review of Energy Data Operations Publications." The purpose of the mock-up is to illustrate some of the options discussed in the previous report and, where necessary, to elaborate on some of the issues previously raised. The mock-up is presented first and is followed by text that discusses changes made to the original MER. For comparison purposes, the electric utilities section in the March, 1981 MER has been included in Appendix A.

Electric Utilities Section Mock-up

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Electric Utilities

On December 31, 1980, utility stocks of coal totaled 183.0 million tons. Stockpiles were 14.6 percent above the levels of December 1979. Petroleum stocks (excluding petroleum coke) on December 31, 1980, totaled 135.1 million barrels, 2.8 percent above the levels for the same month of 1979.

Electric utility petroleum consumption (excluding petroleum coke) during December 1980 was 39.7 million barrels, a 8.8 percent drop from the December 1979 level. Coal consumption for December 1980 was 51.2 million tons, 8.7 percent above the December 1979 rate. During December 1980, consumption of natural gas by electric utilities was 240.2 billion cubic feet, 3.6 percent below the December 1979 consumption level.

December 1980 generation by utilities was 195.4 billion kilowatt-hours, 3.6 percent above the December 1979 production level. Coal-fired generation totaled 104.3 billion kilowatt-hours and nuclear production totaled 22.1 billion kilowatt-hours. These figures reflect increases of 8.4 and 7.5 percent, respectively, above the December 1979 output levels. Petroleum-fired generation totaled 23.4 billion kilowatt-hours, natural gas-fired generation totaled 22.8 billion kilowatt-hours, and hydroelectric generation totaled 22.3 billion kilowatt-hours, 7.3, 3.0 and 1.9 percent, respectively, below the December 1979 levels.

Sales of electricity to all ultimate consumers in the United States in December 1980 totaled 175.6 billion kilowatt-hours, an increase of 8.3 percent from sales of the month before the 3.6 percent above December 1979 sales. Sales to residential consumers during December 1980 were 60.8 billion kilowatt-hours, 4.6 percent above sales for the corresponding month in 1979. Commercial sales were 39.8 billion kilowatt-hours, 5.0 percent more than the amount for December 1979. Sales to industrial consumers totaled 68.5 billion kilowatt-hours in December 1980, about 1.8 percent more than the December 1979 figure. In December 1980 other sales totaled 6.5 billion kilowatt-hours, 5.8 percent above the December 1979 level.

Part 7

Electric Utilities

Electric Utilities

End-of-Month Coal and Petroleum Stocks

		Coal	Petroleum ¹	Petroleum Coke
		Thousand short tons	Thousand barrels	Thousand short tons
1972		†000,000	†000,000	†000
1974		†000,000	†000,000	†000
1975		†000,000	†000,000	†000
1976		†000,000	†000,000	†000
1977		†000,000	†000,000	†000
1978		†000,000	†000,000	†000
1979	January	000,000	000,000	000
	February	000,000	000,000	000
	March	000,000	000,000	000
	April	000,000	000,000	000
	May	000,000	000,000	000
	June	000,000	000,000	000
	July	000,000	000,000	000
	August	000,000	000,000	000
	September	000,000	000,000	000
	October	000,000	000,000	000
	November	000,000	000,000	000
	December	000,000	000,000	000
1980	January	000,000	000,000	000
	February	000,000	000,000	000
	March	000,000	000,000	000
	April	000,000	000,000	000
	May	000,000	000,000	000
	June	000,000	000,000	000
	July	000,000	000,000	000
	August	000,000	000,000	000
	September	000,000	000,000	000
	October	000,000	000,000	000
	November	000,000	000,000	000
	December	000,000	000,000	000

¹ Includes fuel Oil No. 2, No. 4, No. 5, No. 6, crude oil, and kerosene.

†Total as of December 31.

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

Source: See Sources on last page of this section.

Electric Utilities

Coal Stocks

Petroleum Stocks

Electric Utilities

Coal, Petroleum and Gas Consumed to Generate Electricity

		Coal	Petroleum ¹	Petroleum Coke	Natural Gas
		Thousand short tons	Thousand barrels	Thousand short tons	Million cubic feet
1973	TOTAL	000,000	000,000	000	0,000,000
1974	TOTAL	000,000	000,000	000	0,000,000
1975	TOTAL	000,000	000,000	000	0,000,000
1976	TOTAL	000,000	000,000	000	0,000,000
1977	TOTAL	000,000	000,000	000	0,000,000
1978	TOTAL	000,000	000,000	000	0,000,000
1979	January	00,000	00,000	00	000,000
	February	00,000	00,000	00	000,000
	March	00,000	00,000	00	000,000
	April	00,000	00,000	00	000,000
	May	00,000	00,000	00	000,000
	June	00,000	00,000	00	000,000
	July	00,000	00,000	00	000,000
	August	00,000	00,000	00	000,000
	September	00,000	00,000	00	000,000
	October	00,000	00,000	00	000,000
	November	00,000	00,000	00	000,000
	December	00,000	00,000	00	000,000
	TOTAL	000,000	000,000	000	0,000,000
1980	January	00,000	00,000	00	000,000
	February	00,000	00,000	00	000,000
	March	00,000	00,000	00	000,000
	April	00,000	00,000	00	000,000
	May	00,000	00,000	00	000,000
	June	00,000	00,000	00	000,000
	July	00,000	00,000	00	000,000
	August	00,000	00,000	00	000,000
	September	00,000	00,000	00	000,000
	October	00,000	00,000	00	000,000
	November	00,000	00,000	00	000,000
	December	00,000	00,000	00	000,000
	TOTAL	000,000	000,000	000	0,000,000

¹ Includes fuel oil No. 2, No. 4, No. 5, No. 6, crude oil, and kerosene.
 Geographic coverage: the 50 United States and District of Columbia.
 Totals may not equal sum of components due to independent rounding.
 Source: See Sources on the last page of this section.

Electric Utilities

Coal Consumption

Petroleum Consumption

Natural Gas Consumption

Electric Utilities

Net Electricity Generation by Primary Energy Source
(Million Kilowatt-hours)

		Total	Coal	Petroleum ¹	Natural Gas	Nuclear	Hydro	Other ²
1973	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1974	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1975	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1976	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1977	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1978	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1979	January	000,000	00,000	00,000	00,000	00,000	00,000	000
	February	000,000	00,000	00,000	00,000	00,000	00,000	000
	March	000,000	00,000	00,000	00,000	00,000	00,000	000
	April	000,000	00,000	00,000	00,000	00,000	00,000	000
	May	000,000	00,000	00,000	00,000	00,000	00,000	000
	June	000,000	00,000	00,000	00,000	00,000	00,000	000
	July	000,000	00,000	00,000	00,000	00,000	00,000	000
	August	000,000	00,000	00,000	00,000	00,000	00,000	000
	September	000,000	00,000	00,000	00,000	00,000	00,000	000
	October	000,000	00,000	00,000	00,000	00,000	00,000	000
	November	000,000	00,000	00,000	00,000	00,000	00,000	000
	December	000,000	00,000	00,000	00,000	00,000	00,000	000
	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000
1980	January	000,000	00,000	00,000	00,000	00,000	00,000	000
	February	000,000	00,000	00,000	00,000	00,000	00,000	000
	March	000,000	00,000	00,000	00,000	00,000	00,000	000
	April	000,000	00,000	00,000	00,000	00,000	00,000	000
	May	000,000	00,000	00,000	00,000	00,000	00,000	000
	June	000,000	00,000	00,000	00,000	00,000	00,000	000
	July	000,000	00,000	00,000	00,000	00,000	00,000	000
	August	000,000	00,000	00,000	00,000	00,000	00,000	000
	September	000,000	00,000	00,000	00,000	00,000	00,000	000
	October	000,000	00,000	00,000	00,000	00,000	00,000	000
	November	000,000	00,000	00,000	00,000	00,000	00,000	000
	December	000,000	00,000	00,000	00,000	00,000	00,000	000
	TOTAL	0,000,000	000,000	000,000	000,000	000,000	000,000	000,000

¹Includes fuel oil No. 2, No. 4, No. 5, No. 6, crude oil, kerosene and petroleum coke.

²Includes geothermal, wood and waste.

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

Source: See Sources on last page of this section.

Electric Utilities

Electricity Sales to Ultimate Consumers
(Million Kilowatt-hours)

		Total	Residential	Commercial	Industrial	Other ¹
1973	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1974	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1975	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1976	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1977	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1978	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1979	January	000,000	00,000	00,000	00,000	0,000
	February	000,000	00,000	00,000	00,000	0,000
	March	000,000	00,000	00,000	00,000	0,000
	April	000,000	00,000	00,000	00,000	0,000
	May	000,000	00,000	00,000	00,000	0,000
	June	000,000	00,000	00,000	00,000	0,000
	July	000,000	00,000	00,000	00,000	0,000
	August	000,000	00,000	00,000	00,000	0,000
	September	000,000	00,000	00,000	00,000	0,000
	October	000,000	00,000	00,000	00,000	0,000
	November	000,000	00,000	00,000	00,000	0,000
	December	000,000	00,000	00,000	00,000	0,000
	TOTAL	0,000,000	000,000	000,000	000,000	00,000
1980	January	000,000	00,000	00,000	00,000	0,000
	February	000,000	00,000	00,000	00,000	0,000
	March	000,000	00,000	00,000	00,000	0,000
	April	000,000	00,000	00,000	00,000	0,000
	May	000,000	00,000	00,000	00,000	0,000
	June	000,000	00,000	00,000	00,000	0,000
	July	000,000	00,000	00,000	00,000	0,000
	August	000,000	00,000	00,000	00,000	0,000
	September	000,000	00,000	00,000	00,000	0,000
	October	000,000	00,000	00,000	00,000	0,000
	November	000,000	00,000	00,000	00,000	0,000
	December	000,000	00,000	00,000	00,000	0,000
	TOTAL	0,000,000	000,000	000,000	000,000	00,000

¹Includes street lighting and transportation uses.

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

Source: See Sources on the last page of this section.

Sources for the Electric Utilities Section

Generation, Fuel Consumption, Fuel Stocks: U.S. Department of Energy, Energy Information Administration publications, *Power Production and Generating Capacity Data for 1972-1977* (DOE/EIA-0052/1), 1973-1977; *Power Production, Fuel Consumption and Installed Capacity Data* (DOE/EIA-0005), 1978-June 1980; *Electric Power Monthly* (DOE/EIA-0226) July 1980.

Sales: U.S. Department of Energy, Energy Information Administration publications; *Electric Power Statistics* (DOE/EIA-0034), 1973-1979; *Financial Statistics of Electric Utilities and Interstate Natural Gas Pipeline Companies* (DOE/EIA-0147), 1978-February 1980; *Sales, Revenue and Income of Electric Utilities* (DOE/EIA-0147) March 1980.

EXAMPLE

Discussion

Discussion of Mock-up

This part of the supplement consists of a brief discussion of some aspects of data presentation in the mock-up. It concentrates on these areas:

- Electric Utility Data
- Section Organization
- Summary Page
- Headnotes
- Endnotes
- Overall Tabular Format
- Graph Format

The discussion for each of these areas is divided into four parts:

- Presentation in the MER
- Presentation in the Mock-up
- Discussion
- Other Discussion

Electric Utility Data

Presentation in the MER

The electric utility section of the MER contains five types of data:

- Electrical production by energy source
- Electricity sales by consumer category
- Consumption and stocks of coal by rank
- Consumption and stocks of petroleum by prime mover (type of generating plant)
- Consumption and stocks of gas

Presentation in the Mock-Up

The tables and graphs which describe fossil fuel consumption and stocks and appear in the mock-up are substantially different from those in the MER. Coal rank data (anthracite, bituminous, lignite) and petroleum prime-mover data (gas turbine/internal combustion) have each been replaced with the headings "Coal" and "Petroleum."

Discussion

Coal Rank Data. The elimination of coal rank data from the electric utilities section is presented as an option in the original report. The primary reason for displaying a consolidated coal figure is that none of the more specific electric or coal publications have comprehensive coal rank data, for example, stocks of lignite are only published in the MER. The MER is a summary publication and should not contain more detailed data than the subject specific publications.

Petroleum Prime-Mover Data. The MER divides petroleum stocks and consumption into three categories:

- Steam
- Gas Turbine/Internal Combustion
- Petroleum Coke

The rationale behind the display of petroleum data in this manner is unclear. The title of the consumption table is "Primary Energy Consumed to Produce Electricity." While the column headings for gas, coal, and petroleum coke all identify specific types of fuel, the headings "steam" and "gas turbine/internal combustion" identify types of generating units. The types of petroleum used in these generating units vary and are not exclusive.

If the table is intended to display fuel consumption data by prime mover, then the title of the table should be changed to "Primary Energy Consumed to Produce Electricity by Prime Mover." In addition, columns should be added for gas fired steam and gas turbine/internal combustion units.

The fossil fuel stocks table in the MER shares the same inconsistencies as the fuel consumption table. In addition, stocks data by prime mover are not published in the Electric Power Monthly (EPM).

The MER, as a summary publication, is intended to provide a general overview of energy. Consumption and stocks data by prime mover may be too detailed for the average user; therefore, the presentation of consumption and stocks data have been simplified in the mock-up.

Section Organization

Presentation in the MER

The electric utilities section of the MER consists of a summary page of text, four tables, and five graphs which are displayed in the following order:

- Summary page (text)
- Electricity generation by fuel type (table)
- Electricity sales (table)
- Fossil fuel consumption (table)
- Coal consumption (graph)
- Petroleum consumption (graph)
- Natural gas consumption (graph)
- End of month coal and petroleum stocks (table)
- Coal stocks (graph)
- Petroleum stocks (graph)

In general, the MER highlights production/consumption relationships. The order of these tables and graphs is consistent with the publication's overall format.

Presentation in the Mock-Up

The tables and graphs in the mock-up are displayed in the following order:

- Fuel stocks (table)
- Coal stocks (graph)
- Petroleum stocks (graph)

- Fossil fuel consumption (table)
- Coal consumption (graph)
- Petroleum consumption (graph)
- Gas consumption (graph)
- Electricity generation by fuel type (table)
- Electricity sales (table)

Discussion

The order used in the mock-up reflects the process by which electricity is generated. It is consistent with the organization of the EPM. However, the audiences of the EPM and the MER may have different data requirements. Therefore, the table and graph organization used in the EPM may not be effective in the MER. The tables and graphs in the mock-up were ordered to parallel the EPM to provide a comparison to the MER's current format.

Summary Page

Presentation in the MER

Each of the MER's ten sections or chapters is prefaced by a text summary page that highlights the content of the chapter. The text, depending on length, is displayed in one or two columns (see Exhibit 1 for format). The dimensions of the columns are 2½" wide by a maximum depth of 9-1/8".

The electric utility chapter summary page text is displayed in two columns, each approximately 5" deep (see Appendix A).

Data Presentation in the Mock-Up

The summary page in the mock-up differs from the MER in two areas: the text has been set in one 2-5/8 column; and bold face type has been used to highlight the different types of data.

Discussion

Single Column Format: The summary text for the electric utility section requires about ten column inches under the MER's current format. This barely.

EXHIBIT 1: Summary Page Format

exceeds the column depth limitations. Dividing the text into two columns of 5" each leaves half of the page blank and makes the page look somewhat awkward.

There are three solutions to this problem:

- Shorten the text
- Reduce the type size
- Expand the column width

Shortening the text or reducing the type size might diminish the clarity of the summary. Therefore, the third option was chosen for the mock-up. There are two advantages of expanding the column width of the text to 2-5/8".

- The electric utility text will fit in a single column.
- The slight difference in column widths is not an obvious change in format.

Bold Face Type. Bold face type has been used to highlight phrases used in the text; for example, consumption of natural gas.

Other Discussion

The MER, as well as a number of other Office of Energy Data Operations (OEDO) publications, prefates chapters or sections with text summary pages. These pages compare current period data with historic data. In the March MER, the text contains summary data for December, 1980 and December, 1979, as well as the difference in levels expressed as a percentage. Although the text provides a change from the tables and graphs throughout the MER, the data contained in the summary page might be better represented in one or more tables. Exhibit 2 is an illustration of a table which could either replace or, if reduced, augment the existing text. This communicates the summary data more quickly than text and is a more efficient method of presentation.

Electric Utilities

Summary

	December		Percent Change
	1980	1979	
Electricity Generation Primary Energy Source			
Total	195.4	188.7	+3.6
Coal	104.3	96.2	+3.4
Petroleum	23.4	25.2	-7.3
Natural Gas	22.8	23.5	-3.0
Nuclear	22.1	20.6	+7.5
Hydro	22.3	22.8	-1.9
Other	.5	.5	+0.0
Electricity Sales to Ultimate Consumers			
	December		Percent Change
	1980	1979	
Total	175.6	169.5	+3.6
Residential	60.1	58.1	+4.6
Commercial	39.8	37.9	+5.0
Industrial	68.5	67.3	+1.8
Other	6.4	6.1	+5.3
Fossil Fuel Consumption and Stocks			
Consumption			
Coal (Million Short Tons)	51.2	47.1	+8.7
Petroleum (Million Barrels)	39.6	43.5	-8.8
Natural Gas (Billion Cubic Feet)	240.2	249.2	-3.6
End-of-Month Stocks			
Coal (Million Short Tons)	183.0	159.7	+14.6
Petroleum (Million Barrels)	135.1	131.4	+2.8

Geographic Coverage: the 50 United States and the District of Columbia.
 Sources: See Sources on the last page of this section.

Exhibit 2. Summary Table

Headnotes

Presentation in the MER

Table headnotes (titles, running heads, etc.) in the electric utilities chapter of the MER are:

- Net Electricity Production by Primary Energy Source
- Electricity Sales
- Primary Energy Consumed to Produce Electricity
- End of Month Coal and Petroleum Stocks.

The running head "Electric Utilities" is included at the top of each page. Table reference numbers, and units of measurement are not included in the MER's headnotes.

Presentation in the Mock-up

The headnotes in the mock-up have titles with slightly different wording than in the MER and, where possible, include units of measurement. Table titles in the mock-up are:

- Net Electricity Generation by Primary Energy Source
- Electricity Sales to Ultimate Consumers
- Coal, Petroleum and Gas Consumed to Generate Electricity
- End-of-Month Coal and Petroleum Stocks.

Discussion

Electrical Production/Generation. The term "electricity production" was changed to "electricity generation" to make the titles more consistent with those in the EPM and other OEDO electric publications. Although the MER emphasizes production/consumption relationships, electrical generation is a more widely used term.

Electricity Sales to Ultimate Consumers. This title has been expanded to include data originally placed in a footnote. This title eliminates the need for the footnote.

Coal, Petroleum and Gas Consumed to Generate Electricity. In this title, the words coal, petroleum and gas replace the phrase "primary energy."

The reference to the fossil fuels is more specific and more clearly identifies the data in the table.

Units of Measurement. In two of the tables the units of measurement have been moved from the boxhead to the headnote. This presentation has been provided as an illustration of an alternative format to the one currently in use in the MER.

Other Discussion

Standards for headnotes vary between manuals. However, the Government Printing Office (GPO) Style Manual, the Energy Information Administration (EIA) Publications Manual and A Manual of Style by the University of Chicago Press fundamentally agree on some of the items that a headnote should include. In tables having a consistent unit of measure, all three manuals recommend that the units be placed in the headnote. Reference numbers and a list of tables are also recommended for all tables.

Endnotes

Presentation in the MER

The endnotes (footnotes, source notes) in the four tables in the electric utilities section are:

- Title: Net Electricity Production by Primary Energy Source

Endnote:

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

¹Includes bituminous coal, lignite, and anthracite.

²Includes fuel oil No. 2, No. 4, No. 5, No. 6, crude oil, kerosene, and petroleum coke.

³Includes geothermal, wood and waste.

Source: • Federal Power Commission Form 4, "Monthly Power Plant Report".

- Title: Electricity Sales
Endnote:
Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
¹Electricity sales to all ultimate consumers.
²Includes street lighting and transportation uses.
Source: • 1973 through February 1980: FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income"; March 1980 forward: Federal Energy Regulatory Commission Form 5, "Electric Utility Company Monthly Statement."
- Title: Primary Energy Consumed to Produce Electricity
Endnote:
Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
Source: • Federal Power Commission Form 4, "Monthly Power Plant Report."
- Title: End-of-Month Coal and Petroleum Stocks
Endnote:
Geographic coverage: the 50 United States and District of Columbia.
Totals may not equal sum of components due to independent rounding.
‡Total as of December 31.
Source: • Federal Power Commission Form 4, "Monthly Power Plant Report."

Presentation in the Mock-Up

The endnotes in the mock-up differ from those in the MER in their organization, content, and source references.

Discussion

Organization. The footnotes and notes have been reordered to conform to EIA standards, and to highlight data which are unique to the table, for example "Total as of December 31."

Content. The endnotes have been shortened by eliminating footnotes that define terms which are not unique to the table; for example, the table "Net Electricity Production by Primary Energy Source" contains a footnote on coal reading, "Includes bituminous coal, lignite and anthracite." As sub-bituminous and bituminous coal data are combined, this footnote does not exclude any form of coal and, therefore, can be eliminated. The previous report on the MER contains a recommendation that coal rank data should be eliminated. If that recommendation is implemented, and the glossary definitions of bituminous, lignite and anthracite are consolidated under the heading "Coal", then this footnote can be eliminated. The footnotes referencing the terms "petroleum" and "other" have been included in the mock-up because they have definitions specific to the tables in which they appear.

Source Notes. The MER, as a summary publication, contains data published in other publications. It may be advantageous to reference these publications as sources of data instead of the reporting forms. Readers requiring more specific data on a topic will be able to locate the publication, instead of having to cross reference the form. In addition, the option exists for eliminating very specific notes and information in the MER by referencing the relevant publication. The source notes in the mock-up reference publications instead of forms as an illustration of this option. The format deviates slightly from EIA standards by referencing the department (DOE) and agency (EIA) only once at the beginning of each note.

Overall Tabular Format

Presentation in the MER

The tabular format of the MER does not conform to a number of standards for tabular materials found in the EIA, GPO or Chicago publication style manuals. The most obvious example of nonconformance is in the MER's lack of head rules, boxhead cut-off rules, and footrules. (It should be noted that the GPO style manual states that tables can be set without horizontal rules if the titles are set in italics.) The tables in the MER do not include stubheads. Other examples which have already been discussed are the order of footnotes and the placement of units of measurement.

Presentation in the Mock-Up

The tabular format in the mock-up does not differ significantly from the one currently used in the MER, except where previously noted. Column heads have been centered more precisely and the spacing of columns have been slightly altered to improve the presentation.

Discussion

Tabular standards exist for two reasons. The first of these is to ensure that data are presented clearly. The second is to ensure that data in a publication or throughout a series of publications is presented consistently. The tabular format used in the MER is effective and economical. The use of rules and stubheads will not significantly improve the presentation of data in the publication.

The MER's tabular format is inconsistent with those used in the majority of OEDO statistical publications. However, given the assumption that the MER has a fairly broad, general readership, the "informal" table format currently in use may be more accessible than that of a formal table.

Graph Format

Presentation in the MER

The graphs in the MER plot up to thirty-six months of data with a single line. This format emphasizes trends, rather than month-by-month comparisons.

Presentation in the Mock-Up

As an alternative, the graphs in the mock-up plot each year as a separate line. Symbols have been added to plot January data.

Discussion

The graphs used in the mock-up closely duplicate the data presented in the March 1981 MER. (See Appendix A) Month-to-month comparisons are easily made under the multiple line format and trends can be seen. However, a multi-line

graph plotting data for three or more years may look cluttered, especially in relatively stable industries such as coal. Therefore, any transition to multi-line graphs in the MER should be considered carefully before implementation.

Appendix A.

Electric Utilities Section in the March 1981 Monthly Energy Review

Electric Utilities

December 1980 production of electricity by utilities was 195.4 billion kilowatt-hours, 3.6 percent above the December 1979 production level. Coal-fired production totaled 104.3 billion kilowatt-hours and nuclear production totaled 22.1 billion kilowatt-hours. These figures reflect increases of 8.4 and 7.5 percent, respectively, above the December 1979 output levels. Petroleum-fired production totaled 23.4 billion kilowatt-hours, natural gas-fired production totaled 22.8 billion kilowatt-hours, and hydroelectric production totaled 22.3 billion kilowatt-hours, 7.3, 3.0 and 1.9 percent, respectively, below the December 1979 levels.

Sales of electricity to all ultimate consumers in the United States in December 1980 totaled 175.6 billion kilowatt-hours, an increase of 3.3 percent from sales of the month before and 3.6 percent above December 1979 sales. Sales to residential consumers during December 1980 were 60.8 billion kilowatt-hours, 4.6 percent above sales for the corresponding month in 1979. Commercial sales were 39.8 billion kilowatt-hours, 5.0 percent more than the

amount for December 1979. Sales to industrial consumers totaled 68.5 billion kilowatt-hours in December 1980, about 1.8 percent more than the December 1979 figure. In December 1980 other sales totaled 6.5 billion kilowatt-hours, 5.8 percent above the December 1979 level.

Electric utility petroleum consumption (excluding petroleum coke) during December 1980 was 39.7 million barrels, a 8.8 percent drop from the December 1979 level. Coal consumption for December 1980 was 51.2 million tons, 8.7 percent above the December 1979 rate. During December 1980, consumption of natural gas by electric utilities was 240.2 billion cubic feet, 3.6 percent below the December 1979 consumption level.

On December 31, 1980, utility stocks of anthracite, bituminous coal, and lignite totaled 183.0 million tons. Stockpiles were 14.6 percent above the levels of December 1979.

Petroleum stocks (excluding petroleum coke) on December 31, 1980, totaled 135.1 million barrels, 2.8 percent above the levels for the same month of 1979.

Electric Utilities

Net Electricity Production by Primary Energy Source

		Coal ¹	Petroleum ²	Natural Gas	Nuclear	Hydro	Other ³	Total
		Million kilowatt-hours						
1973	TOTAL	847,651	314,343	340,858	83,479	272,083	2,294	1,860,710
1974	TOTAL	828,433	300,931	320,065	113,976	301,032	2,703	1,867,140
1975	TOTAL	852,786	289,095	299,778	172,505	300,047	3,437	1,917,649
1976	TOTAL	944,391	319,988	294,624	191,104	283,707	3,883	2,037,696
1977	TOTAL	985,219	358,179	305,505	250,883	220,475	4,063	2,124,323
1978	TOTAL	975,742	365,080	305,391	276,403	280,419	3,315	2,206,331
1979	January	94,986	39,474	22,093	27,792	25,021	326	209,692
	February	84,748	32,274	21,844	25,911	21,275	285	186,337
	March	85,220	22,076	24,916	24,335	25,921	382	182,849
	April	80,450	20,599	24,763	18,418	25,389	342	169,962
	May	86,140	21,470	26,135	13,025	28,939	350	178,059
	June	90,817	24,367	30,107	16,065	24,979	347	186,662
	July	97,879	25,750	34,676	20,825	22,761	364	202,255
	August	97,910	26,123	34,949	24,204	21,260	405	204,850
	September	85,664	22,509	31,442	21,804	18,978	354	180,751
	October	87,526	20,279	30,419	20,934	20,167	389	179,716
	November	87,456	23,380	24,661	19,255	22,367	387	177,506
	December	96,230	25,223	23,481	20,586	22,727	456	186,703
	TOTAL	1,075,037	303,525	329,485	255,155	279,783	4,387	2,247,372
1980	January	103,147	25,099	26,350	19,746	25,297	388	200,027
	February	98,148	24,784	24,748	19,277	21,378	373	188,708
	March	95,387	20,419	26,964	20,039	24,332	401	187,542
	April	83,534	16,064	24,015	18,794	25,745	410	168,562
	May	84,882	16,560	26,573	18,385	28,866	468	175,733
	June	93,690	18,034	31,282	18,322	27,656	445	189,430
	July	107,891	23,293	39,060	21,024	24,418	475	216,160
	August	107,580	24,889	37,640	24,333	20,476	517	215,435
	September	97,556	17,816	33,572	23,578	18,491	469	191,483
	October	91,147	15,893	28,592	24,510	17,866	533	178,541
	November	83,501	19,988	24,343	20,984	19,217	519	178,552
	December	104,340	23,388	22,776	22,130	22,284	504	195,420
	TOTAL	1,160,802	246,226	345,914	251,122	276,026	5,503	2,285,593

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

¹Includes bituminous coal, lignite, and anthracite.

²Includes fuel oil No. 2, No. 4, No. 5, No. 6, crude oil, kerosene, and petroleum coke.

³Includes geothermal, wood and waste.

Source: *Federal Power Commission Form 4, "Monthly Power Plant Report".

Electric Utilities

Electricity Sales¹

		Residential	Commercial	Industrial	Other ²	Total
		Million kilowatt-hours				
1973	TOTAL	579,231	388,266	686,085	59,326	1,712,909
1974	TOTAL	578,184	384,826	684,875	58,039	1,705,924
1975	TOTAL	584,712	401,674	675,271	68,153	1,729,810
1976	TOTAL	602,863	423,639	739,965	69,557	1,836,024
1977	TOTAL	641,134	444,931	772,291	70,489	1,928,845
1978	TOTAL	671,094	459,908	800,656	73,152	2,004,814
1979	January	69,939	40,362	68,324	6,762	185,387
	February	67,842	39,865	67,632	6,176	181,515
	March	59,314	38,123	69,783	6,029	173,249
	April	50,079	35,930	69,944	5,604	161,557
	May	45,730	36,398	71,798	5,625	159,551
	June	49,556	39,689	71,919	5,696	166,860
	July	58,606	42,773	70,984	5,976	178,339
	August	64,808	44,199	71,956	6,346	187,310
	September	59,703	42,498	71,014	6,425	179,641
	October	49,505	38,820	71,472	6,151	165,948
	November	49,617	36,711	69,780	6,163	162,271
	December	58,120	37,939	67,297	6,117	169,473
	TOTAL	682,819	473,307	841,903	73,070	2,071,101
1980	January	65,852	39,516	67,634	6,658	179,660
	February	64,503	39,600	68,384	6,171	178,658
	March	60,497	38,784	69,058	6,028	174,368
	April	51,749	36,436	68,007	5,510	161,703
	May	45,699	36,110	67,235	5,807	154,851
	June	52,267	40,129	66,739	5,737	164,872
	July	68,611	45,525	65,531	6,215	185,882
	August	74,893	47,679	67,377	6,255	196,205
	September	67,969	46,028	69,570	6,572	190,139
	October	54,012	40,478	69,414	6,174	170,078
	November	50,539	37,954	67,613	6,068	162,174
	December	60,775	39,846	68,517	6,469	175,607
	TOTAL	717,366	488,085	815,079	73,664	2,094,197

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

¹Electricity sales to all ultimate consumers.

²Includes street lighting and transportation uses.

Source: • 1973 through February 1980: FPC Form 5, "Monthly Statement of Electric Operating Revenue and Income"; March 1980 forward: Federal Energy Regulatory Commission Form 5, "Electric Utility Company Monthly Statement."

Electric Utilities

Primary Energy Consumed to Produce Electricity

		Coal				Petroleum			Natural Gas
		Anthracite	Bituminous Coal	Lignite	Total	Steam	Gas Turb./ Int. Comb.	Coke	
		Thousand short tons				Thousand barrels		Thousand short tons	Million cubic feet
1973	TOTAL	1,443	376,975	10,794	389,212	513,190	47,058	507	3,660,172
1974	TOTAL	1,498	378,643	11,670	391,811	483,146	53,128	625	3,443,428
1975	TOTAL	1,480	388,523	15,960	405,962	467,221	38,907	70	3,157,669
1976	TOTAL	1,350	425,205	21,817	448,371	514,077	41,843	68	3,080,868
1977	TOTAL	1,425	451,051	24,650	477,126	574,869	48,837	98	3,191,200
1978	TOTAL	1,064	448,763	31,407	481,235	588,319	47,520	398	3,188,363
1979	January	39	43,791	3,021	46,902	62,226	6,244	33	228,479
	February	75	39,010	2,806	41,891	51,655	4,959	32	226,896
	March	65	38,865	2,852	41,781	36,371	1,872	22	260,351
	April	66	36,362	2,551	38,979	33,800	1,682	15	260,974
	May	106	38,669	2,757	41,532	35,285	2,053	23	277,318
	June	103	40,882	3,023	44,008	39,258	2,314	25	320,196
	July	96	44,391	3,730	48,216	41,895	2,413	23	369,318
	August	97	44,553	3,899	48,549	42,478	2,416	23	375,370
	September	86	38,920	3,162	42,167	36,768	1,747	17	338,308
	October	75	39,634	3,261	42,970	33,445	1,132	16	323,082
	November	92	39,571	3,317	42,980	37,822	1,954	18	260,982
	December	96	43,480	3,499	47,075	41,601	1,906	20	249,249
	TOTAL	1,046	488,129	37,876	527,051	492,606	30,691	268	3,490,523
1980	January	74	46,516	3,779	50,369	41,107	2,197	54	276,784
	February	72	43,969	3,471	47,513	40,238	1,920	21	263,709
	March	83	43,244	3,357	46,685	33,413	1,397	13	283,845
	April	71	37,971	2,651	40,692	27,030	673	7	256,606
	May	86	38,116	3,262	41,464	27,090	841	11	281,862
	June	89	42,073	3,658	45,821	29,635	1,139	11	336,894
	July	93	49,743	3,746	53,582	37,298	2,801	11	420,339
	August	80	49,077	4,057	53,214	40,165	2,832	15	405,292
	September	84	44,487	3,342	47,913	29,374	1,289	11	357,152
	October	73	41,811	3,200	45,085	26,353	689	8	301,343
	November	56	42,379	3,263	45,698	32,780	1,320	7	255,663
	December	89	47,212	3,856	51,157	38,390	1,284	9	240,248
	TOTAL	951	526,599	41,642	569,192	402,875	18,383	179	3,679,734

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

Source: • Federal Power Commission Form 4, "Monthly Power Plant Report."

Electric Utilities

Coal Consumption

Petroleum Consumption

Natural Gas Consumption

Electric Utilities

End-of-Month Coal and Petroleum Stocks

		Coal				Petroleum		
		Anthracite	Bituminous Coal	Lignite	Total	Steam	Gas Turb./ Int. Comb.	Coke
		Thousand short tons				Thousand barrels		Thousand short tons
1973		\$1,066	\$84,941	\$961	\$86,967	\$79,121	\$10,095	\$312
1974		\$930	\$81,712	\$867	\$83,509	\$97,718	\$15,199	\$35
1975		\$982	\$107,927	\$1,815	\$110,724	\$108,825	\$16,432	\$31
1976		\$1,000	\$114,130	\$2,306	\$117,436	\$106,993	\$14,703	\$32
1977		\$2,321	\$128,210	\$2,688	\$133,219	\$124,750	\$19,281	\$44
1978		\$2,178	\$123,020	\$3,027	\$128,225	\$102,402	\$16,386	\$198
1979	January	2,154	114,980	2,814	119,948	89,583	15,635	181
	February	2,136	109,532	2,728	114,394	82,078	15,541	166
	March	2,170	113,669	2,704	118,542	96,033	16,386	170
	April	2,220	120,876	2,680	125,776	99,500	16,835	170
	May	2,231	128,962	2,600	133,793	106,017	16,974	159
	June	2,233	131,898	2,495	136,627	104,513	17,180	150
	July	2,290	126,328	2,478	131,095	104,170	17,578	160
	August	2,328	128,760	3,170	134,257	103,965	17,910	163
	September	2,385	133,605	3,139	139,129	104,857	18,733	164
	October	2,452	144,035	3,462	149,949	109,590	19,410	170
	November	2,496	151,848	3,393	157,737	111,072	19,714	170
	December	3,274	152,981	3,459	159,714	111,121	20,301	183
1980	January	3,371	151,881	3,455	158,707	114,007	19,607	175
	February	3,451	150,147	3,522	157,120	111,362	19,050	168
	March	3,488	151,022	3,118	157,625	116,291	18,909	154
	April	3,533	157,148	3,843	164,524	118,803	19,176	103
	May	3,725	166,339	3,980	174,044	122,832	19,463	69
	June	3,838	171,041	4,079	178,959	124,781	19,216	65
	July	3,955	159,205	3,691	166,852	121,622	20,490	65
	August	4,098	163,756	4,036	171,891	118,524	19,043	63
	September	4,291	166,515	4,262	175,067	122,235	17,818	81
	October	4,481	173,411	4,153	182,045	124,176	18,397	60
	November	4,661	175,489	3,983	184,133	119,802	17,998	53
	December	4,741	174,154	4,115	183,010	117,310	17,826	52

Geographic coverage: the 50 United States and District of Columbia.

Totals may not equal sum of components due to independent rounding.

\$Total as of December 31.

Source: • Federal Power Commission Form 4, "Monthly Power Plant Report."

Electric Utilities

Coal Stocks (Bituminous Coal, Lignite, and Anthracite)

Petroleum Stocks