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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Honorable Carl Levin United States Senate And The Honorable John Conyers, Jr. House Of Representatives

Natural Gas Price Increases In Detroit

Natural gas prices increased an average 38 percent in the Detroit, Michigan, area between January 1981 and January 1983. GAO found that about two-thirds of the price increase was due to (1) the depletion of old and less expensive gas reserves and the addition of new and higher cost reserves and (2) price increases permitted by federal regulation. Another major reason for the price increase was a decline in gas consumption which made purchasing patterns and company operations less cost-efficient. The remaining increase stemmed from operating costs.

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JANUARY 11, 1985

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GENERAL ACCOUNTING OFFICE
REPORT TO CARL LEVIN
UNITED STATES SENATE
AND JOHN CONYERS, JR.
HOUSE OF REPRESENTATIVES

NATURAL GAS PRICE INCREASES IN DETROIT

D I G E S T

Natural gas prices in the Detroit, Michigan, area increased, on average, $1.43 per thousand cubic feet, or 38 percent, from January 1981 to January 1983. Senator Carl Levin and Congressman John Conyers, Jr., asked GAO to analyze the factors responsible for the increase. (See pp. 3 and 31.)

The Michigan Consolidated Gas Company (MichCon) is the distributor that sells gas to consumers in Detroit, Grand Rapids, Ann Arbor, Muskegon, and certain other Michigan communities. MichCon's major suppliers during GAO's review were ANR Pipeline Company, Great Lakes Transmission Company, and Panhandle Eastern Pipe Line Company. GAO obtained and analyzed information primarily from these companies in order to identify the factors contributing to this price increase. (See pp. 1 to 5.)

MichCon is regulated by the Michigan Public Service Commission. MichCon's three major suppliers are interstate pipeline companies subject to regulation by the Federal Energy Regulatory Commission. (See pp. 1 and 2.)

AN OVERVIEW OF PRICE INCREASES

Retail prices of natural gas in Detroit consisted primarily of three major components: (1) the cost of gas purchased by the pipeline suppliers, (2) the pipeline companies' cost to transport gas from producing areas to MichCon's distribution area, and (3) MichCon's cost to distribute gas throughout Detroit and the rest of its service area. (See pp. 30 and 31.)

The cost per thousand cubic feet to an average MichCon consumer increased $1.43, from $3.80 to $5.23, between January 1981 and January 1983. The increase was due to the cost of purchased gas (66 percent), transmission costs (20 percent), and distribution costs (14 percent). (See pp. 30 to 32.)

(GAO/RCED-85-48)
JANUARY 11, 1985

Tear Sheet

Increases in gas purchase costs

MichCon's pipeline suppliers obtained gas from three primary sources--the largest of these being domestic producers, followed by other interstate pipeline companies and imports from Canada. Domestic gas production is subject to federal price controls established under the Natural Gas Policy Act of 1978. The act established a series of maximum legal prices for numerous categories of gas, depending on when and where the gas was found, when it was contracted for, and other factors. The price of gas purchased from other interstate pipelines is also subject to federal regulation. Prices for gas imported from Canada were established pursuant to a joint agreement between the United States and Canadian governments. (See pp. 19 to 27.)

The pipeline companies' average cost of gas per thousand cubic feet to MichCon increased $1.19, from $2.36 to $3.55, between January 1981 and January 1983. This increase was generally due to (1) the depletion of old reserves and the addition of new reserves because the new gas was permitted a higher price under federal regulation and (2) higher prices for both old and new gas, as permitted under the federal regulation. (See pp. 19 to 26.)

Increases in transmission costs

In addition to paying higher prices for gas, the pipeline companies incurred higher costs to transport the gas to MichCon. The companies' average transmission costs per thousand cubic feet increased $0.29, from $0.65 to $0.94, from January 1981 to January 1983. The largest single factor influencing these cost increases was operations and maintenance expenses ($0.11). The remaining costs occurred due to increases in taxes, interest, and other factors. (See pp. 27 and 28.)

In January 1983 these costs per thousand cubic feet ranged from the $0.45 charged by Great Lakes for interstate transmission of gas from the Canadian border to the $1.33 charged by ANR Pipeline for transporting domestic gas from Louisiana, Texas, and other states. (See p. 18.)

MichCon's pipeline suppliers' rates were designed to permit recovery of purchased gas costs and transmission expenses and to earn a fair and reasonable rate of return on their investment. The amounts that were considered fair and reasonable were subject to review and regulation by the appropriate regulatory body. (See pp. 19 to 21, 28, and 29.)

Increases in distribution costs

In addition to paying more to its suppliers, MichCon's costs to distribute the gas to its customers in Detroit and other communities in Michigan also increased. MichCon's average gas cost per thousand cubic feet increased from $3.01 to $4.49, while its distribution costs per thousand cubic feet increased $0.20, from $0.79 to $0.99, from January 1981 to January 1983. One-half of the increase ($0.10) occurred in operations and maintenance expenses. The other half was due to taxes and other factors. (See pp. 14 and 19.)

Lower sales were the dominant factor contributing to higher distribution costs. Many of MichCon's costs remain relatively unchanged when sales increase or decrease. Because MichCon's sales decreased, its costs were spread over fewer units, thereby increasing average unit costs. If MichCon's sales had remained constant, its distribution costs would have only increased $0.10 per unit. (See pp. 13 to 15.)

AGENCY COMMENTS

GAO did not seek written comments from any federal agency. GAO did, however, request comments from MichCon, ANR Pipeline, Great Lakes, and Panhandle Eastern. Each of the companies generally commented that GAO's analysis was thorough, objective, and accurate. (See p. 4.)

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ABBREVIATIONS

Bcf	billion cubic feet
FERC	Federal Energy Regulatory Commission
GCR	gas cost recovery
Mcf	thousand cubic feet
MichCon	Michigan Consolidated Gas Company
NGPA	Natural Gas Policy Act of 1978
PGA	purchased gas adjustment

CHAPTER 1

INTRODUCTION

Substantial recent increases in natural gas prices and uncertainty about future prices have focused considerable congressional and public attention on natural gas issues. There has been continuing debate among the Congress, the administration, and the industry generally over what the national policy toward natural gas should be. The Congress is currently considering proposals to change federal regulation of natural gas pricing.

Increases in natural gas prices have significantly affected the consumers of gas, the companies that supply them, and the government agencies that regulate such sales. Consumers seek relief from higher fuel bills. The companies face declining consumption because of higher prices. The regulatory agencies try to balance the interests of gas suppliers and users.

STRUCTURE OF THE NATURAL GAS INDUSTRY

Natural gas accounted for nearly 25 percent of the energy consumed in the United States in 1983. Overall, about 95 percent of this gas was produced domestically; the remaining gas was imported from Algeria, Canada, and Mexico.

Gas is used throughout the economy. Nationwide, industry accounted for about 36 percent of all gas used in 1983, more than any other sector. Residences accounted for about 29 percent, where gas is the fuel used most often for home heating. The others are electric utilities (19 percent) and commercial establishments (16 percent).

The natural gas industry is comprised of three sectors--distribution, transmission, and production--which are physically interconnected by a network of pipelines and mains nationwide. Companies in the various sectors may also be related through corporate affiliations.

End-users typically buy their natural gas from the almost 1,600 distribution companies nationwide. They are usually local public utilities, serving a specific market area and under the jurisdiction of a state or local regulatory body. Michigan Consolidated Gas Company (MichCon), the largest natural gas distributor in Michigan, serves Detroit and other communities

throughout the state.[1] It also has facilities for storing gas and operates an intrastate pipeline. MichCon's operations in Michigan are regulated by the Michigan Public Service Commission.

Distributors buy most of their natural gas from transmission or pipeline companies which transport gas from producing areas to consuming areas. MichCon purchased gas in 1983 from ANR Pipeline Company,[2] Panhandle Eastern Pipe Line Company, and Great Lakes Gas Transmission Company, 3 of the 139 interstate pipeline companies which are regulated by the Federal Energy Regulatory Commission (FERC). Intrastate pipeline companies in the producing states are generally subject to state regulation.

Pipeline companies obtain gas they transport from independent domestic producers, other pipeline companies, foreign sources, and their own production. Producers are thousands of large, medium, and small companies which explore for, drill for, and produce gas. All domestic production is subject to federal price regulation.[3] Texas, Louisiana, Oklahoma, New Mexico, and Kansas--in descending order--accounted for about 87 percent of domestic production in 1982 (the latest available data). Michigan's production was less than 1 percent in 1983.

ANR Pipeline, MichCon's major supplier, obtained over 80 percent of its gas supply from producers operating in the major producing areas in the United States. Panhandle Eastern purchased most of its supply from producers operating in Texas, Oklahoma,

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[1]Prior to January 1, 1982, MichCon was affiliated with ANR Pipeline Company, its major supplier of natural gas. American Natural Resources Company, a Michigan corporation, owned all of the common stock of both MichCon and ANR Pipeline. In October 1981 American Natural Resources organized Primark Corporation for the primary purpose of becoming the parent of MichCon. On December 7, 1981, American Natural Resources transferred all of MichCon's common stock to Primark. On December 31, 1981, the shares of Primark's common stock were distributed to the holders of common stock of American Natural Resources, and Primark became a publicly owned corporation. American Natural Resources' divestiture of Primark Corporation ended the affiliation that existed between the Detroit distributor and its major supplier.

[2]ANR Pipeline Company was known as Michigan Wisconsin Pipe Line Company prior to January 1, 1984, when its name was formally changed.

[3]Until January 1, 1985, federal ceilings limited the prices that could be paid for almost all domestic production, but prices for a small proportion were not controlled. A substantial quantity of gas that was formerly subject to price controls was decontrolled on January 1, 1985. Production may also be subject to regulation at the state level, with respect to prices and levels of production.

Kansas, and adjacent areas. Great Lakes, an ANR Pipeline affiliate, obtained its gas supply from Canadian sources.

OBJECTIVE, SCOPE, AND METHODOLOGY

This report was prepared in response to separate requests from Senator Carl Levin and Congressman John Conyers, Jr. Senator Levin's November 30, 1982, letter asked us to conduct a study of natural gas pricing, supplies, and regulation. Congressman Conyers' January 27, 1983, letter asked us to look at consumer prices and the prices charged by transmission companies to distributors in the Detroit area. Based on these letters and subsequent agreements with the requestors' offices, we

--briefed Senator Levin's office on various aspects of the natural gas industry and issues relating to recent natural gas price increases;

--briefed Congressman Conyers' office on various aspects of the natural gas industry and issues relating to recent natural gas price increases in Detroit;

--testified on natural gas price increases in Detroit before the Subcommittee on Commerce, Consumer and Monetary Affairs, House Committee on Government Operations, on May 9, 1983 in Detroit, Michigan; and

--prepared this report.

Our objective in this review was to identify factors which contributed to increased prices paid by MichCon's Detroit customers for natural gas service between January 1981 and January 1983. The time periods selected for comparative analysis were the months of January 1981 and January 1983. These time periods are so noted throughout this report. Since some data are commonly compiled and tabulated on an annual basis, periodic reference is made to annual data. In these instances the year in question is noted simply as 1981 or 1983.

We relied largely on information provided by MichCon, its suppliers, and the Michigan Commission. We did not independently verify the accuracy of these data. The financial data on which we relied are not adjusted for inflation. We did not evaluate the appropriateness or effectiveness of actions by any government agency or private party, nor do we make recommendations.

This report is based in part on our previous work in the natural gas area. The reports which we used include: Natural Gas Price Increases: A Preliminary Analysis, (GAO/RCED-83-76, Dec. 9, 1982); Information on Contracts Between Natural Gas Producers and Pipeline Companies, (GAO/RCED-83-5, Feb. 22, 1983); State and Local Responses to Natural Gas Price Increase, (GAO/RCED-83-142, Apr. 25, 1983); Natural Gas Price Increases in Kansas City,

(GAO/RCED-84-77, Feb. 10, 1984); and Natural Gas Price Increases in Los Angeles, (GAO/RCED-84-178, July 31, 1984).

Quantities of natural gas are often measured on the basis of volume. Frequently used measures include thousand cubic feet (Mcf) and billion cubic feet (Bcf). Alternatively, gas may be measured on the basis of heat content, in terms of British thermal units. A million British thermal units are approximately equivalent to an Mcf. For ease of presentation, we used only volume measures of natural gas in this report.

The information in the following chapters is organized to follow the Detroit natural gas consumer's dollar from the burner tip through the distributor and the pipeline to the producer.

--Chapter 2 discusses natural gas customers and rates in Detroit.

--Chapter 3 discusses the distribution of natural gas in Detroit.

--Chapter 4 discusses the transmission of natural gas to Detroit.

--Chapter 5 presents an overview of price changes in Detroit.

Except as noted above, this review was conducted in accordance with generally accepted government auditing standards. It was performed during the period from February 1983 through September 1984.

AGENCY COMMENTS

GAO did not seek written comments from any federal agency because the report contains no analysis, conclusions, or recommendations about any actions by a federal government agency. We did, however, obtain written comments from MichCon and ANR Pipeline. (See apps. I and II, respectively). Great Lakes and Panhandle Eastern chose not to submit written comments, but provided oral comments. Both the written and oral comments were incorporated where appropriate. Each of the companies generally commented that our analysis was accurate, fair, and thorough.

CHAPTER 2

NATURAL GAS CUSTOMERS AND RATES IN DETROIT

MichCon was the largest natural gas distributor in Michigan in 1983, serving over 1 million customers. About 63 percent of MichCon's gas sales revenues, excluding sales to other gas distributors and pipeline companies, were derived from sales in the Detroit metropolitan area.[1] MichCon customers include industrial and commercial concerns as well as residences. Each of these retail customer classes substantially reduced consumption between 1978 and 1983 as MichCon's retail sales dropped from 450.1 Bcf to 308.5 Bcf.

The Michigan Commission is responsible for reviewing and regulating the rates that MichCon charges each of its customer classes. Natural gas rates to Detroit customers increased 37 to 40 percent, depending on customer class during the 2-year period ending January 1983.

This chapter presents information on the company's customers and sales and the rates it charged end-users.

GAS SALES AND CUSTOMER CLASSES

MichCon provides two types of service to its three major customer classes. Firm service, offered to residential, commercial, and most industrial customer classes, provides assured availability even during periods of peak demand. Interruptible service is made available under agreements that permit curtailment of deliveries when gas is needed for firm service, usually during peak use in winter. Interruptible service is offered to large volume industrial users at a lower rate than firm service. The interruptible customers must have standby facilities that enable them to switch to an alternative fuel--such as residual fuel oil--during a curtailment or interruption of the natural gas service. When the price of residual fuel oil drops below the energy-equivalent price of natural gas, changes to oil use are easily and quickly made in the industrial plants which already have installed oil-burning equipment.

Although residential users represented more than 93 percent of the company's customers in 1983, they accounted for only about 44 percent of the gas sold by MichCon. Industrial customers represented less than 1 percent of the customers, but accounted for 22 percent of the gas volumes sold. Nearly one-half of the sales to the industrial market were made to three automobile

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[1]MichCon also distributes gas in Grand Rapids, Ann Arbor, Muskegon, and various communities in the central and northern portions of Michigan's lower peninsula and the central and eastern portions of the upper peninsula.

companies and three steel producers. Table 1 provides information on customers, sales of gas, and gross revenue from gas sales by customer classification for 1981 and 1983.

Table 1

MichCon's Customers, Sales, and Revenues by Class of Customer for 1981 and 1983

Customer class	Average number of customers 1981	Average number of customers 1983	Volume of sales 1981	Volume of sales 1983	Revenue 1981	Revenue 1983
			---(in Bcf)----		-(in millions)-	
Residential	977,520	968,452	162.6	151.7	$ 677	$ 888
Commercial	70,460	68,296	92.1	82.8	374	472
Industrial	1,222	1,135	109.6	74.0	425	404
Other	3	7	2.2	12.0	9	39
Total	1,049,205	1,037,890	366.5	320.5	$1,485	$1,803

Source: Michigan Consolidated Gas Company.

The decline in sales between 1981 and 1983 represented a continuation of a trend that began in 1978. (See table 2.) The company experienced a 134.9 Bcf (30 percent) decline in the volume of natural gas sold between 1978 and 1983. Gas sales to residential users declined 19.3 Bcf (11 percent), while sales to commercial and industrial customers declined 34.7 Bcf (30 percent) and 87.6 Bcf (54 percent), respectively. In fact, the only customer class that experienced a positive change in sales from 1978 to 1983 was sales to the other category (comprised mostly of intrastate distributors) which experienced a 6.7 Bcf increase.

Table 2

MichCon's Sales by Customer Class from 1978 Through 1983

Year	Residential	Commercial	Industrial	Other	Total
	----------(in Bcf)----------				
1978	171.0	117.5	161.6	5.3	455.4
1979	180.0	105.4	159.4	4.5	449.3
1980	176.6	102.2	115.7	3.6	398.1
1981	162.6	92.1	109.6	2.2	366.5
1982	159.4	88.2	84.0	2.3	333.9
1983	151.7	82.8	74.0	12.0	320.5

Source: Michigan Consolidated Gas Company.

According to MichCon, the decline in sales to the residential and commercial customers reflected conservation efforts in response to increasing gas prices. The decline in industrial gas sales was almost evenly divided between plant closings and conversions to other fuels. More than half of the fuel conversions were to coal, which is viewed by MichCon as a permanent industrial load loss. The remaining conversions were generally to residual fuel oil by industrial customers with alternative fuel-burning capability.

END-USER RATE STRUCTURE

The Michigan Commission determines the revenues that MichCon needs to provide for its operating expenses, interest, and return on equity and then approves a rate structure designed to meet those revenue requirements. The Michigan Commission bases its decision on MichCon's sales, costs, net investment in facilities, and authorized rate of return. The end-user rate structure which the Michigan Commission authorized is exclusive of the cost of gas charged by MichCon's suppliers. In other words, the Michigan Commission concerns itself primarily with distribution costs in authorizing the end-user rate structure. It generally treats the distributor's cost of purchased gas as an external cost. The cost of gas represents approximately 80 percent of end-user rates, the majority of which is subject to FERC's jurisdiction.

End-user rates consisted of a monthly customer charge--regardless of the volume of gas consumed--and a commodity charge--which applied to each unit of gas consumed. Rates to customers in Detroit for January 1981 and January 1983 are shown in table 3.

Table 3

MichCon's Rates in January 1981 and January 1983

Type of service	January 1981 Monthly customer charge	January 1981 Commodity charge per Mcf	January 1983 Monthly customer charge	January 1983 Commodity charge per Mcf
Residential	$ 4.00	$3.69[a]	$ 5.25	$5.13[b]
Commercial	8.00	3.81	10.00	5.32
Industrial:				
Firm	400.00	3.72	500.00	5.19
Interruptible	625.00	3.54	750.00	4.95

[a]The commodity charge was $3.69 per Mcf for the first 10 Mcf each month, $3.49 per Mcf for 10.1 to 30 Mcf, and $3.99 per Mcf for quantities over 30 Mcf.

[b]There was an additional commodity charge of $0.25 per Mcf for quantities over 10 Mcf sold during June, July, August, or September.

Source: Michigan Consolidated Gas Company.

Both the monthly customer charges and the commodity charges for each customer class increased during the 2-year period ending January 1983. Residential customers' commodity rates per Mcf increased from $3.69 to $5.13, or 39 percent. Commercial commodity rates per Mcf increased from $3.81 to $5.32 (40 percent). Firm industrial commodity rates per Mcf increased from $3.72 to $5.19 (40 percent), while interruptible industrial rates increased from $3.54 to $4.95 (40 percent).

The average revenue (including both customer and commodity charges) collected from each customer class increased between January 1981 and January 1983. Our analysis shows that gas prices increased 37 to 40 percent during the 2-year period, depending on the type of service, as shown in table 4. Price increases ranged from $1.40 to $1.51 per Mcf.

Table 4

MichCon's Average Rates for the 2-year Period Ending January 1983

Type of Service	Price per Mcf January 1981	Price per Mcf January 1983	Increase in Price Per Mcf	Increase in Price Percent
Residential	$3.80	$5.31	$1.51	40
Commercial	3.87	5.33	1.46	38
Industrial[a]	3.75	5.15	1.40	37

[a]Includes both firm and interruptible service.

Source: Based on information from Michigan Consolidated Gas Company.

SUMMARY

MichCon, the largest natural gas distributor in Michigan, served over 1 million customers in 1983, which were principally located in the Detroit metropolitan area.

The volume of gas sold by MichCon declined from 1981 to 1983, but its revenues increased. The number of customers within each of MichCon's three major customer classes (residential, commercial, and industrial) also declined.

The rates charged by MichCon to each of its customer classes are subject to regulation by the Michigan Commission. Although these rates increased from 37 to 40 percent (depending on the customer class involved) during the 2-year period from January 1981 to January 1983, approximately 80 percent of this increase was attributable to the increase in the cost of gas.

CHAPTER 3

DISTRIBUTION OF NATURAL GAS IN DETROIT

MichCon acquires its natural gas supplies from three major interstate pipelines, local producers, and its own production. In addition to its gas purchases, MichCon incurs distribution expenses. The Michigan Commission reviews MichCon's costs and allows the company a rate of return on equity. The details of the price increases to Detroit customers are shown in table 5.

Table 5

Price Increases per Mcf to MichCon's Customer Classes for the 2-Year Period Ending January 1983

Type of service	Components of price: January 1981	Components of price: January 1983	Increase
Residential:			
Payments to suppliers	$3.01	$4.24	$1.23
Distribution costs	0.91	1.17	0.26
Price to end-user	$3.92	$5.41	$1.49
Commercial:			
Payments to suppliers	$3.01	$4.24	$1.23
Distribution costs	0.82	1.04	0.22
Price to end-users	$3.83	$5.28	$1.45
Industrial:			
Payments to suppliers	$3.01	$4.24	$1.23
Distribution costs	0.64	0.74	0.10
Price to end-user	$3.65	$4.98	$1.33

Source: Michigan Consolidated Gas Company.

This chapter provides information on MichCon's purchased gas costs, distribution costs, and rate of return on equity.

SOURCES AND COSTS OF GAS

MichCon purchased natural gas under long-term contracts from ANR Pipeline, Panhandle Eastern, Great Lakes, local independent producers, and its own production. Table 6 sets forth details of MichCon's gas purchases for 1981 and 1983.

Table 6

MichCon's Gas Purchases by Source and Cost per Mcf in 1981 and 1983

Source	1981 Purchases Quantity in Bcf	1981 Purchases Percent	1981 Cost per Mcf	1983 Purchases Quantity in Bcf	1983 Purchases Percent	1983 Cost per Mcf
Pipeline suppliers:						
ANR	288.3	68	$3.39	248.9	69	$4.46
Panhandle Eastern	50.2	12	2.49	34.8	10	4.29
Great Lakes	14.9	3	5.34	11.3	3	5.17
Michigan producers	70.9	17	2.40	65.1	18	3.24
Total purchases[a]	424.3	100	3.19[b]	360.1	100	4.25[b]

[a]Excludes negligible volumes of owned production.

[b]Weighted average.

Source: Michigan Consolidated Gas Company.

MichCon bought its gas from pipeline suppliers at the FERC approved rates then in effect and, in turn, applied to the Michigan Commission to recover its purchased gas costs. MichCon was permitted to recover the cost of purchased gas through a provision in its tariff called a purchased gas adjustment (PGA)

clause, which was similar to provisions under FERC regulations.[1] The PGA clause allowed the distributor to recover costs periodically. According to a MichCon spokesperson, the clause was intended to prevent cash-flow problems for the company and reduce the number of full-scale rate proceedings. The PGA was intentionally designed to recover less than a dollar-for-dollar recovery as an incentive to reduce costs.

Increases in the price of gas paid to pipeline suppliers or intrastate producers were recovered by MichCon through a PGA filing with the Michigan Commission. Each month MichCon determined the weighted average cost per Mcf of its gas supply.[2] The computation was based on acquisition costs incurred in purchasing or producing gas. Also, the computation was adjusted to reflect gas placed into storage or removed from storage. The final weighted average cost per Mcf was incorporated through the PGA mechanism in the rates charged all end-users in Detroit. The January 1983 rates charged to end-users in Detroit reflected PGA filings made by MichCon through November 1982.

The rates posted by ANR Pipeline, MichCon's major supplier, had the most impact in determining the weighted average cost of natural gas. Other sources had lesser influence depending on the proportion each supplied. The suppliers' average rates to MichCon for January 1981 and January 1983 are shown in table 9 on page 18.

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[1]According to MichCon, in October 1982 the Michigan state legislature passed legislation abolishing the PGA and permitted the Michigan Commission to adopt new gas cost recovery procedures under which a gas utility is allowed to recover the cost of gas sold if the Michigan Commission determines that such costs are reasonable and prudent. The new gas cost recovery (GCR) plan differs from the PGA in that it is not automatic in nature and requires at least an annual review by the Michigan Commission. On November 2, 1982, Michigan voters approved two ballot proposals which would amend, in different ways, certain provisions of Michigan law concerning rate increases. Both proposals provided for the abolition of automatic PGA clauses. Accordingly, cost of gas rates were frozen at the November 1982 PGA level. On December 3, 1982, MichCon filed an application with the Michigan Commission, under the new GCR law, requesting authorization to implement a new GCR clause and rate factors to recover anticipated increases in the cost of gas during 1983. On April 1, 1983, MichCon put into effect for the first time rates that were authorized under the GCR plan.

[2]Gas use is greater in the winter months than the summer months. To prepare for this peak winter usage, MichCon purchases more gas than it needs during the summer and places this gas in storage fields for withdrawal and sale during the winter.

The weighted average cost of natural gas increased from $3.01 per Mcf in January 1981 to $4.49 per Mcf in January 1983. The average cost of $3.01 per Mcf was reflected in the rates charged Detroit customers on January 31, 1981. The rates charged customers on January 31, 1983, however, reflected a gas cost of $4.24 per Mcf, or $0.25 per Mcf lower than the actual weighted average cost. This difference occurred because the PGA adjustments were frozen at the November 1982 level and gas cost increases experienced by MichCon in December 1982 and January 1983 were not immediately passed on to its customers.

DISTRIBUTION COSTS

Distribution costs incurred by MichCon were incorporated into the rates charged its Detroit customers. The company's rates included a provision for its operations and maintenance expenses, depreciation, interest, taxes, and return on equity. Also included was provision for the company-owned and -operated storage fields that were used to provide storage services to others and to supplement MichCon's supply sources during the winter. The Michigan Commission reviewed these items during rate proceedings and provided for their recovery.

The changes in the various cost categories that occurred during the 2-year period ending January 1983 are shown in table 7. The biggest increase--$0.10 per Mcf--occurred in operations and maintenance costs. This category, which is exclusive of purchased gas costs, includes labor costs, supplies, and uncollectible accounts. Other categories each increased $0.03 per Mcf or less. Return on equity, which represents MichCon's profits, increased $0.02 per Mcf.

Table 7

MichCon's Distribution Costs
per Mcf in January 1981 and January 1983

Cost category	January 1981	January 1983	Increase
Operations and maintenance	$0.35	$0.45	$0.10
Depreciation	.10	.11	.01
Interest	.09	.10	.01
Income taxes	.08	.11	.03
Other taxes	.07	.09	.02
Dividends on preferred stock	.01	.02	.01
Return on common equity	.09	.11	.02
Total	$0.79	$0.99	$0.20

Source: Michigan Consolidated Gas Company.

The distribution unit costs increased during the 2-year period ended January 1983. The analysis showing the composition of the distribution costs for January 1981 and January 1983 was based on the cost of service authorized by the Michigan Commission which was reflected in the actual rates charged MichCon customers during those 2 months. Increased costs amounted to $0.20 per Mcf during the 2-year period.

Distribution costs were not spread evenly over all classes of customers. During the period of our review, the residential customers were assigned the highest cost per Mcf and the industrial customers were assigned the lowest cost per Mcf. The costs assigned to each class of customer were based in part on the actual cost of providing service to that class. MichCon's rate design was also based in part on a continuation of historical rate relationships. Table 8 shows the distribution costs as approved by the Michigan Commission that were reflected in the rates that were in effect in January 1981 and January 1983.

Table 8

MichCon's Distribution Costs per Mcf by Customer Class in January 1981 and January 1983

Date	Systemwide average	Residential	Commercial	Industrial
January 1981	$0.79	$0.91	$0.82	$0.64
January 1983	0.99	1.17	1.04	0.74

Source: Michigan Consolidated Gas Company.

Lower sales were the dominant factor contributing to higher distribution costs. Although sales may increase or decrease, many distribution costs remain relatively unchanged. Because sales decreased significantly during our review period, there were fewer units over which the company was able to recover its distribution costs. Accordingly, the increase in the systemwide distribution costs would have been $0.10 per Mcf had gas sales remained constant. The additional $0.10 per Mcf was the result of lower sales volumes by MichCon. Operation and maintenance expenses represent the greatest portion of the increase in distribution costs. According to a MichCon official, factors contributing to this increase, in addition to the decline in sales, include a substantial increase in uncollectible accounts expense, increased labor costs, and inflation.

RATE OF RETURN

The return on stockholders' common equity is considered a part of the distributor's cost of service. During a general rate case, the Michigan Commission would usually deliberate on the rate of return to be allowed on common equity. The Michigan Commission's decision did not guarantee the company a specific rate of return, but rather provided the distributor the opportunity to earn an equitable return on its invested capital. If the Commission's assumptions and judgments regarding sales and costs proved to be inaccurate, the company would earn more or less than the targeted profit.

The Michigan Commission allowed MichCon a return on common equity of 13.25 and 14.82 percent for 1981 and 1983, respectively. However, MichCon was not successful in earning its authorized average rate of return on common equity in either year. The company earned 9.5 percent in 1983 and 5.8 percent in 1981. The company attributed its failure to earn its authorized rate of return to significant decreases in sales volumes not fully reflected in the rates approved by the Commission.

MichCon's distribution activities[3] earned $0.06 per Mcf for 1983 compared with $0.03 per Mcf in 1981. According to MichCon, rate increases coupled with tight cost controls enabled the company to increase earnings despite declining gas sales.

SUMMARY

MichCon's major supplier was ANR Pipeline. Other pipeline suppliers were Panhandle Eastern and Great Lakes. MichCon obtained a significant portion of its gas supply by direct purchases from independent producers located in Michigan.

The Michigan Commission generally allowed MichCon to pass increases in its gas costs to the end-users as they occurred. The pass-through of gas costs caused price increases to each category of Detroit customer of $1.23 per Mcf. The pass-through accounted for 83 to 92 percent of the price increase that occurred during the period. In addition, the distributor was permitted by the Michigan Commission to increase its rates in recognition of the higher costs incurred for the distribution of gas. The decisions of the state authorities caused price increases ranging from $0.10 to $0.26 per Mcf for the various customer classes. Thus, increases in distribution costs accounted for the remaining 8 to 17 percent of the price increase.

The utility division of MichCon earned $0.06 per Mcf and $0.03 per Mcf in 1983 and 1981, respectively. The company, however, earned a rate of return on stockholder equity that was significantly less than the rate authorized by the Michigan Commission.

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[3]Includes only earnings attributable to distribution activities--not field storage or intrastate transmission activities.

CHAPTER 4

TRANSMISSION OF NATURAL GAS TO DETROIT

ANR Pipeline supplied approximately 69 percent of MichCon's gas for 1983. Panhandle Eastern and Great Lakes supplied an additional 10 and 3 percent of the total requirement, respectively. Also, MichCon obtained 18 percent of its supply needs by direct purchases from independent producers operating in Michigan.

Rates charged by the pipeline companies provided for the recovery of both purchased gas costs and transmission costs. Purchased gas costs represented payment to producers and other transmission companies for the acquisition of the natural gas. Transmission costs included a provision for operation and maintenance expenses (including fuel usage), depreciation, interest, taxes, and a return on preferred and common equity.

The cost incurred by MichCon's suppliers in purchasing gas from producers and other transmission companies increased considerably in the 2-year period ending January 1983. Transmission costs also increased during the period. The pass-through of these costs caused price increases to MichCon of 41 percent ($3.01 to $4.24 per Mcf)[1] for gas that was ultimately resold to end-users, as shown in table 9.

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[1]As noted on pages 15 and 16 not all of MichCon's costs were passed through to its customers. Although MichCon's purchased gas cost was $4.49 per Mcf, its cost pass-through was only $4.24 per Mcf.

Table 9

Pipeline Suppliers' Average Rate Increases to MichCon for the 2-Year Period Ending January 1983

Supplier	Cost per Mcf January 1981	Cost per Mcf January 1983	Increase	Percent increase
ANR Pipeline:				
Purchased gas costs	$2.32	$3.28	$0.96	69
Transmission costs	0.89	1.33	0.44	31
Price to distributor	$3.21	$4.61	$1.40	100
Panhandle Eastern:				
Purchased gas costs	$1.74	$3.05	$1.31	73
Transmission costs	0.52	1.00	0.48	27
Price to distributor	$2.26	$4.05	$1.79	100
Great Lakes:				
Purchased gas costs	$4.45	$4.90	$0.45	80
Transmission costs	0.34	0.45	0.11	20
Price to distributor	$4.79	$5.35	$0.56	100
Intrastate producers:				
Purchased gas costs	$2.22	$3.08	$0.86	100
Transmission costs	-	-	-	-
Price to distributor	$2.22	$3.08	$0.86	100
All suppliers:				
Purchased gas costs[b]	$2.36	$3.55	$1.19	80
Transmission costs[b]	0.65	0.94	0.29	20
Price to distributor	$3.01	$4.49	$1.48	100

[a]Because MichCon takes delivery of this gas at the wellhead with its own pipeline system and distributes it to customers in adjacent service areas, transmission costs are negligible. Any costs that are incurred are absorbed in MichCon's operation and maintenance expenses.

[b]Weighted average.

Source: ANR Pipeline Company, Panhandle Eastern Pipe Line Company, Great Lakes Transmission Company, and Michigan Consolidated Gas Company.

PURCHASED GAS COSTS

MichCon's pipeline suppliers obtained their gas from many sources. ANR Pipeline obtained its gas supply from major producing areas in the United States and Canada. In 1983 about 86 percent of its supplies were purchased from producers operating in Louisiana, Texas, Oklahoma, Wyoming, Kansas, Mississippi, and Texas and Louisiana offshore areas. The company purchased gas from over 1,700 natural gas producers under more than 2,800 contracts. The company also purchased 14 percent of its gas supplies from other pipeline companies.

Panhandle Eastern obtained its gas supply primarily from producers operating in Texas, Oklahoma, and Kansas. Panhandle Eastern also purchased substantial quantities of gas from its principal subsidiary, Trunkline Gas Company. Panhandle Eastern and Trunkline made separate filings to FERC on rate matters and, accordingly, Panhandle Eastern's purchases from Trunkline were made at rates in effect under tariffs on file with FERC.

Great Lakes purchased all of its gas supplies from Trans-Canada Pipelines Limited. All the gas purchased was Canadian gas at rates established by the Canadian government pursuant to a joint agreement between the United States and Canadian governments.

The purchases from producers by MichCon, ANR Pipeline, and Panhandle Eastern are governed by the Natural Gas Policy Act of 1978 (NGPA). The act established eight major price categories,

covered by sections 102 through 109,[2] and additional subcategories depending on when a well is drilled, how deep the well is, when and where the gas was contracted for, and other criteria. Maximum allowable prices for these categories vary widely.

FERC allows pipelines to adjust their rates semiannually to reflect changes in the cost of purchased gas. A pipeline company's request to change its rates to reflect purchased gas costs is known as a PGA filing. PGA filings are placed into effect subject to FERC's review and approval.

ANR Pipeline, Panhandle Eastern, and Great Lakes made semiannual PGA filings in 1981 and 1983.[3] These filings permitted the pipeline suppliers to establish rates that enabled them to

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[2]The NGPA's definitions of the major price categories are complicated. The following definitions are general descriptions only. Section 102 covers gas from new onshore reservoirs, new wells at a minimum distance or depth from an existing well, and certain Outer Continental Shelf reservoirs. Section 103 covers gas produced from new onshore production wells less than a minimum distance and depth from an existing well. Section 104 covers gas from wells dedicated to interstate commerce as of the date of enactment of NGPA. Section 105 covers gas under existing intrastate contracts as of the date of enactment. Section 106 covers gas under "rollover contracts," both inter- and intrastate; such a contract is entered into on or after the date of enactment for gas that was subject to an earlier contract that expired at the end of a fixed term. Section 107 covers high-cost natural gas, from wells at a depth of 15,000 or more feet and three other sources specified in the act or from other sources determined by FERC to present extraordinary costs or risks. Section 108 covers gas from "stripper" wells producing an average of 60 Mcf per day or less during a 90-day production period or more than 60 Mcf per day because of recognized enhanced recovery techniques. Section 109 covers gas not covered by any other price provision.

[3]In 1983 ANR Pipeline had three PGA filings, effective May 1, July 1, and November 1; the July 1 out-of-cycle PGA reflected a $0.10 per Mcf reduction in gas costs. This resulted from ANR Pipeline exercising a market-out provision which permitted it to reduce the price it paid for certain high-cost gas purchases.

recover their purchased gas costs on a current basis.[4] The final PGA filings ANR Pipeline and Great Lakes made in 1982 were reflected in the pipelines' rates to MichCon for deliveries of natural gas made on or after November 1, 1982. Similarly, Panhandle Eastern's last PGA filing for 1982 became effective on September 1, 1982. These were the filings in effect during January 1983.

We analyzed ANR Pipeline's gas purchases for the months of January 1981 and January 1983. Our analysis showed that the cost of purchased gas per Mcf increased from $2.19 to $2.81, or an increase of $0.62 during the period. This was due to an increase in cost per Mcf in each NGPA category and a change in the proportionate quantities of gas purchased from each category. Although the total quantity purchased decreased by 27 percent, the quantity of old gas (sections 104, 105, and 106) declined by 35 percent, while the combined quantities of new gas (sections 102, 103, and 108) and high-cost gas (section 107) increased by 29 percent. Table 10 shows the actual purchases by category during the 2 months.

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[4]The three pipelines made semiannual filings with FERC on their projected gas costs for the succeeding 6-month period. These projections are adjusted to correct for past over-collection or under-collection of the gas purchase costs. When permitted to go into effect by FERC, the new rates reflecting current gas purchase costs became effective on May 1 and November 1 for both ANR Pipeline and Great Lakes and on March 1 and September 1 for Panhandle Eastern.

Table 10

ANR Pipeline's Gas Purchases
by Category in January 1981 and January 1983

Category	January 1981 Volume in Bcf	January 1981 Cost per Mcf	January 1983 Volume in Bcf	January 1983 Cost per Mcf
Old gas:				
Section 104	42.1	$1.28	26.4	$1.52
Section 105	0.1	1.82	0.1	2.11
Section 106	2.6	0.87	2.8	0.90
New gas:				
Section 102	7.2	2.75	8.9	3.45
Section 103	3.7	2.71	3.2	2.91
Section 108	0.1	3.09	0.2	3.65
High-cost gas:				
Section 107	2.7	5.35	5.3	6.79
Pipeline purchases:				
Domestic pipelines	3.6	2.54	2.8	4.18
Canadian pipelines	10.5	4.65	3.5	5.27
Total	72.6	$2.19[a]	53.2	$2.81[a]

[a]Weighted average.

Source: ANR Pipeline Company.

The increase in the average cost, from $2.19 to $2.81 per Mcf, reflects both changes in proportionate volumes and changes in prices.

--The price increase alone (if the purchased volumes of each gas price category remained constant) was $0.44 per Mcf.

--The volume increase alone (if the cost of each category of gas remained constant) was $0.10 per Mcf.

These two factors accounted for 87 percent of the $0.62 price increase. The changes in price of various categories of purchased gas had a greater effect on the average purchase price than did the volumes of gas purchased in the various categories.[5]

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[5]The remainder of the price increase ($0.08 per Mcf) is accounted for by combinations of price and volume changes as well as other causes.

ANR Pipeline attributed the decline in the purchase of the inexpensive old gas and the corresponding increase in the purchase of new gas and high-cost gas to two major factors. One factor was the depletion of old fields. A reservoir contains a given quantity of natural gas. The amount of gas that can be produced economically from a reservoir generally declines each year. The productive life of a reservoir varies, depending on geology and other factors; an individual well may produce economically for a few years or for 20 years or more.

A second factor was the higher purchase requirements of newer contracts with producers. The long-term contracts between ANR Pipeline and its producers contained certain provisions regarding the quantity of gas to be delivered periodically to the pipeline company. During the period of our review, ANR Pipeline experienced a significant decline in gas sales due to the economic recession, permanent business and industry closings, continued fuel conservation by gas consumers, and fuel switching to coal and residual oil within the industrial sector. With the sales reduction, ANR Pipeline reduced its purchases from producers in accordance with its contractual obligations. The more recent contracts generally had higher purchase requirements than the older contracts. Thus, the deliveries of the older, lower cost gas were reduced to a greater extent than the high-cost contracts.

ANR Pipeline's rates to MichCon reflected gas purchase costs of $2.32 and $3.28 per Mcf for January 1981 and January 1983 respectively, compared with the $2.19 and $2.81 per Mcf actually incurred for those same months. The rates charged the distributor, however, included a gas surcharge of $0.12 per Mcf and a Louisiana First Use Tax of $0.03 per Mcf in January 1981 and a $0.23 per Mcf gas surcharge in January 1983 to correct for past under-recovery of gas purchase costs.[6] Our analysis showed that the remaining differences were primarily minor variations in the price or mix of natural gas actually purchased from what was anticipated in the PGA filing that established the rates.

We also analyzed the purchased gas costs included in Panhandle Eastern's rates to MichCon. (See table 11.) The gas purchased costs, as presented in Panhandle Eastern's PGA filings, increased from $1.55 per Mcf to $2.56 per Mcf, for the filings in effect in January 1981 and January 1983, respectively; this is an increase of $1.01 per Mcf during the period.

--The price increase alone (if the purchased volumes of each domestic gas price category remained constant) was $0.43 per Mcf (43 percent of the $1.01 increase).

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[6]The Louisiana First Use Tax was later refunded due to a Supreme Court decision.

--The volume increase alone (if the cost of each category of domestic gas remained constant) was $0.19 per Mcf (19 percent of the increase).

--The purchase of more expensive Canadian pipeline gas in 1983 accounted for an increase of $0.11 per Mcf (11 percent of the increase).

These three factors accounted for 73 percent of the $1.01 price increase. The changes in price of various categories of purchased gas had a greater effect on the average purchase price than did changes in volumes of gas purchased in the various categories.[7]

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[7]The remainder of the price increase ($0.28 Mcf) is accounted for by combinations of price and volume changes as well as other causes.

Table 11

Panhandle Eastern Pipe Line's Gas Purchases by Category in January 1981 and January 1983

Category	PGA filings in effect for the month of: January 1981 Volume in Bcf	January 1981 Cost per Mcf	January 1983 Volume in Bcf	January 1983 Cost per Mcf
Old gas:				
Section 104	379.1	$1.00	235.2	$1.04
Section 105	1.7	2.68	1.3	3.22
Section 106	9.2	0.84	11.5	1.04
New gas:				
Section 102	24.8	2.99	43.8	3.58
Section 103	78.7	2.67	114.3	3.15
Section 108	3.5	3.22	8.8	3.98
High-cost gas:				
Section 107	10.6	2.74	26.2	6.00
Other	12.0	-	10.5	-
Pipeline purchases:				
Domestic pipelines	235.1	2.05	243.3	2.96
Canadian pipelines	-	-	39.7	5.02
Total	754.7	$1.55[a]	735.6	$2.56[a]

[a]Weighted average.

Source: Panhandle Eastern Pipe Line Company.

The cost of the gas increased in all NGPA categories. Also, the proportionate quantities of gas purchased by Panhandle Eastern from each category changed. Although the total quantity of gas purchased by Panhandle Eastern decreased slightly, from 754.7 Bcf to 735.6 Bcf (3 percent), the quantity of old gas purchased declined from 390 Bcf to 248 Bcf (36 percent), and the combined quantities of new gas and high-cost gas increased from 117.6 Bcf to 194.1 Bcf (65 percent). This shift to higher cost gas supplies had the effect of contributing to Panhandle Eastern's rising purchased gas cost. According to the company, the decline in old gas purchased was primarily due to the natural decline in deliverability from the old reservoirs. Panhandle Eastern officials said that in the years 1981 to 1983 the company experienced a 37-percent decrease in the availability of old gas due to this natural decline.

As with ANR Pipeline, Panhandle Eastern's rates to MichCon in January 1981 and January 1983 differed from its actual gas costs. For example, Panhandle Eastern's rates to MichCon in January 1983 included $3.05 per Mcf for purchased gas costs as compared with the $2.56 per Mcf shown in the PGA filing. The additional $0.49 per Mcf charge to MichCon included a $0.41 per Mcf surcharge adjustment to correct for past under-recovery of purchased gas costs.

Great Lakes purchases of Canadian gas were at pre-established rates, pursuant to a joint agreement between the United States and Canadian governments, from TransCanada Pipelines Limited. Great Lakes' purchased gas costs were $4.45 per Mcf in January 1981 and $4.90 per Mcf in January 1983.

MichCon's purchases from local producers were made at various prices at or near the NGPA ceiling levels. In January 1981 MichCon paid $2.22 per Mcf compared with $3.08 per Mcf in January 1983. MichCon estimated that about 84 percent of this supply in 1983 came from one company under the terms and conditions of seven separate gas purchase contracts. MichCon meets at least once each quarter with this company to finalize purchase plans in accordance with the terms of the contracts.

TRANSMISSION COSTS

Transmission costs incurred by the pipeline suppliers are incorporated into the rates charged to MichCon. Transmission costs include operating and maintenance expenses (including fuel usage), depreciation, interest, taxes, and return on preferred and common equity. FERC reviews these items during general rate case proceedings and provides for their recovery.[8] Each pipeline company had a general rate case settled in 1981 and 1982.[9]

We determined the weighted average transmission costs charged to MichCon. The weighted average reflected the proportionate amount of MichCon's gas requirement furnished by each pipeline supplier. The weighted average charged to MichCon increased from $0.65 to $0.94 per Mcf, or about 45 percent, during the 2-year

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[8]In a general rate case filing, FERC has 30 days to respond after which it can suspend the rates for 5 months. After this 6-month period has elapsed, the rate goes into effect subject to refund when the rate case is finally decided by FERC.

[9]ANR's 1982 rate case was settled in November 1983, allowing for rate changes effective November 1, 1982, May 1, 1983, and November 1, 1983. Per the terms of the 1982 rate case settlement, ANR Pipeline could not file a rate case to become effective before November 1, 1984. ANR Pipeline did not file a rate case in 1984, so the settlement rates from the 1982 rate cases will remain in effect until a new rate case is filed.

period ending January 1983. All three pipelines experienced higher operating costs. Also, gas sales by ANR Pipeline and Panhandle Eastern declined during the period, necessitating the recovery of their transmission costs over fewer units.

We analyzed the changes that occurred in the various cost categories during the 2-year period ending January 1983. The largest increase occurred in operation and maintenance costs. This category included various labor, material, and overhead costs incurred for the gathering, storage, and transmission functions. These costs increased $0.11 per Mcf during the 2-year period. According to ANR Pipeline, the increase in this category was primarily attributable to the general effects of inflation, including increased wage rates. Income taxes increased $0.07 per Mcf during the period. ANR Pipeline reported that its income taxes increased as a result of an increase in pre-tax accounting income and changes in estimated state income tax rates. Other cost categories increased $0.06 per Mcf or less. Table 12 shows the transmission costs for January 1981 and January 1983.

Table 12

Weighted Average Transmission
Costs per Mcf in January 1981 and January 1983

Cost category	January 1981	January 1983	Increase (Decrease)
Operations and maintenance	$0.22	$0.33	$0.11
Gas used in operations	.08	.14	.06
Depreciation	.12	.14	.02
Interest	.05	.10	.05
Income taxes	.11	.18	.07
Other taxes	.03	.03	-
Dividends on preferred stock	.02	.02	-
Return on common equity	.10	.15	.05
Sundry gas revenues[a]	(0.08)	(0.15)	(0.07)
Total	$0.65	$0.94	$0.29

[a]Mainly transportation of gas for other pipeline companies.

Source: Based on information from ANR Pipeline Company, Panhandle Eastern Pipe Line Company, and Great Lakes Transmission Company.

Reduced sales contributed to the higher transmission costs. Although sales may expand or contract, many transmission costs remain relatively unchanged. Since sales decreased from 1981 to 1983 for ANR Pipeline and, to a lesser extent, for Panhandle Eastern, there were fewer units over which these companies were able to recover their tranmsission costs. The weighted average transmission costs would have increased from $0.65 to $0.84 per Mcf had gas sales remained level, an increase of $0.19 per Mcf. The additional $0.10 per Mcf was the result of a reduced level of gas sales by the two pipeline companies.

The return on common equity is considered a part of the transmission company's cost of service. For 1981 and 1983, FERC allowed ANR Pipeline a return on common equity of 13.125 and 14.75 percent, respectively, and Panhandle Eastern a return of 13.25 for

1981.[10] FERC did not guarantee the companies a specific rate of return, but instead provided each company the opportunity to earn an equitable return on its invested capital. If certain assumptions and judgments regarding sales volumes and costs proved to be inaccurate, the pipeline would earn more or less than the allowed rate of return.

ANR Pipeline surpassed its authorized rate of return on common equity in both 1981 and 1983. It earned 13.5 percent on common equity in 1981 and 18.9 percent in 1983. Panhandle Eastern Pipe Line earned 13.5 percent in 1981 and 11.7 in 1983.[11] MichCon purchased relatively minor amounts of gas from Great Lakes, and, thus MichCon's purchases did not materially affect Great Lakes' profitability.

SUMMARY

In 1983, 82 percent of the natural gas delivered to Detroit was provided by three pipeline companies, which in turn bought gas from producers or other transmission companies. The other 18 percent was obtained by direct purchases from producers operating in Michigan. ANR Pipeline's and Panhandle Eastern's higher gas costs between January 1981 and January 1983 reflected (1) higher prices per Mcf for gas bought from producers in all NGPA categories, (2) a higher proportion of purchases of new gas and high-cost gas, and a lower proportion of old gas, and (3) higher prices charged by other pipeline companies. Great Lakes' higher gas costs for the same period reflected rate increases by the Canadian government pursuant to joint agreement between the United States and Canadian governments. MichCon's purchases from Michigan producers were made at various prices.

The three pipeline companies' transmission cost per Mcf for the relevant time period increased due to (1) higher costs for operation and maintenance and other costs and (2) lower sales volumes.

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[10] 1983 return on equity was not separately stated in settlement of FERC rate processing.

[11] Includes subsidiary companies.

CHAPTER 5

OVERVIEW OF PRICE CHANGES IN DETROIT

An overall analysis of the changes in natural gas prices to the Detroit consumers for the 2-year period ended January 1983 shows that the principal factor for the higher prices was the increase of purchased gas costs. The purchased gas costs accounted for 63 to 71 percent of the price increase for the various classes of service. Increased transmission costs accounted for 20 to 22 percent of the increase. Distribution costs were responsible for the remaining 7 to 17 percent of the increase. Table 13 shows the results of this analysis.

Table 13

Summary of Changes in Prices per Mcf to MichCon Consumers from January 1981 to January 1983

Service/activity	January 1981		January 1983		Increase	
	Price	Percent	Price	Percent	Price	Percent
Residential:						
Gas purchases[a]	$2.36	60	$3.30	61	$0.94	63
Transmission	0.65	17	0.94	17	0.29	20
Distribution	0.91	23	1.17	22	0.26	17
Price to consumer	$3.92	100	$5.41	100	$1.49	100
Commercial:						
Gas purchases[a]	$2.36	62	$3.30	62	$0.94	65
Transmission	0.65	17	0.94	18	0.29	20
Distribution	0.82	21	1.04	20	0.22	15
Price to consumer	$3.83	100	$5.28	100	$1.45	100
Industrial:						
Gas purchases[a]	$2.36	65	$3.30	66	$0.94	71
Transmission	0.65	18	0.94	19	0.29	22
Distribution	0.64	17	0.74	15	0.10	7
Price to consumer	$3.65	100	$4.98	100	1.33	100

[a]Includes purchases from producers and other pipeline companies.

Source: Based on information from Michigan Consolidated Gas Company, ANR Pipeline Company, Great Lakes Transmission Company, and Panhandle Eastern Pipe Line Company.

We also analyzed data on the acquisition, transmission, and distribution of natural gas in Detroit to determine the relative magnitude of cost changes that occurred during the 2-year period. Although the Michigan Commission approved different cost increases for each customer class for the recovery of distribution costs, we

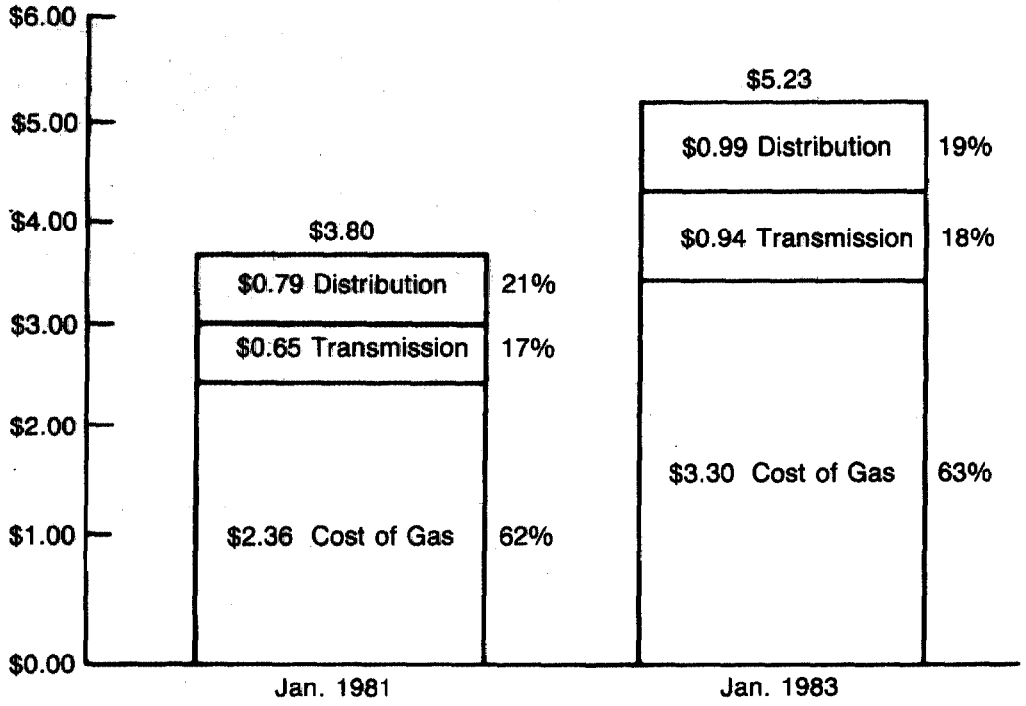
used an average distribution cost in our analysis. Thus, the price we computed does not coincide with the actual price for any particular customer class but is representative of the prices for all classes.

For the 2-year period ending January 1983, gas purchase costs increased from 62 percent to 63 percent of the total end-user price, accounting for the bulk of the price increase, as shown in figure 1. Transmission costs increased from 17 percent to 18 percent of the total end-user price, accounting for the next largest portion of the price increase. Distribution costs declined from 21 percent to 19 percent of the total end-user price. Over 40 percent of the combined transmission and distribution cost increase was attributable to declines in gas sales at both the pipeline and distributor level, necessitating the recovery of these costs over fewer units. The regulatory authorities' provisions for increased return on common equity to the distribution company and its pipeline suppliers accounted for about 14 percent of the price gain.

Overall natural gas prices increased during the 2-year period $1.43 per Mcf (38 percent) from $3.80 per Mcf to $5.23 per Mcf. (See figure 1.) The cost of gas increased $0.94 per Mcf (accounting for 66 percent of the total price increase) from $2.36 per Mcf to $3.30 per Mcf. Transmission costs increased $0.29 per Mcf (20 percent of the total price increase) from $0.65 to $0.94 per Mcf while distribution costs increased $0.20 per Mcf (14 percent of the total price increase) from $0.79 to $0.99 per Mcf.

Figure 1

Average Detroit End-User Cost of Gas per Mcf by Component Parts for January 1981 and January 1983



Source: Based on information obtained from Michigan Consolidated Gas Company, ANR Pipeline Company, Panhandle Eastern Pipe Line Company, and Great Lakes Transmission Company.

Alfred R. Glancy III
Chairman & Chief Executive Officer

mich-con

Michigan Consolidated Gas Company
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313 256-5004

October 19, 1984

Mr. John W. Sprague
Associate Director,
Resources, Community, and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Re: GAO Report on Natural Gas Price Increases in Detroit

Dear Mr. Sprague:

I appreciate the opportunity to comment on your draft report dealing with natural gas price increases in Detroit. Generally, I agree with the contents of the report, but I would like to emphasize that over 80% of those price increases were due to increases in pipeline costs, over which MichCon had very little control. Much of these increases were mandated by the Natural Gas Policy Act of 1978 in an effort to expand domestic natural gas supply. Unfortunately, for reasons discussed below, though natural gas supplies have increased, the price of gas has exceeded market clearing levels. As a result, there has been a dramatic decrease in the demand for gas, particularly in the industrial sector, and we are now faced with an oversupply. Indicative of this fact is that MichCon's industrial sales volumes have declined by more than 50% since the inception of the NGPA.

Fortunately, recent actions by the Federal Energy Regulatory Commission (FERC) may signal the beginning of an effort to make wellhead prices more responsive to demand. In May of this year the FERC voted unanimously to eliminate gas costs from minimum bill provisions in contracts between pipelines and local distribution companies, thus removing the onerous requirement that distribution companies buy gas whether they need it or not. The FERC also has under consideration in various proceedings the adoption of a modified fixed-variable rate design in which all of a pipeline's fixed costs, except rate of return and related taxes, would be recovered through a demand charge and all variable costs plus rate of return and related income taxes are recovered through the commodity charge. Adoption of this rate design would provide incentives for the pipeline to render natural gas service at competitive prices by placing a reasonable element of market risk on the pipelines.

However, there are additional steps that can be taken to bring wellhead prices in line with the market, and Congress should provide the leadership in these areas.

Mr. John W. Sprague
October 19, 1984
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First, Congress should provide the leadership to eliminate, or at least limit the effect of "indefinite price escalator clauses" in pipeline/producer contracts. With the coming of deregulation on January 1, 1985, these clauses will inevitably and arbitrarily increase the field price of deregulated supply above market clearing levels. Instead of allowing for the periodic adjustment of contract prices to current market value, such clauses provide for price escalation based on various indices that have little or no relation to the market value of gas.

Second, take-or-pay provisions in pipeline/producer contracts should also be eliminated or limited because they have kept wellhead prices from responding to market forces. Since, because of these provisions, pipelines cannot react to a decline in competitive fuel prices or a decline in demand by reducing purchases, wellhead prices are not reduced to the extent that circumstances would otherwise suggest. Furthermore, take-or-pay provisions prevent pipelines from purchasing a least cost mix of gas.

Third, Congress can provide leadership in eliminating the special treatment accorded pipelines with regard to the investment tax credit. This treatment, under which such credits benefit the pipelines' shareholders only, is based upon a finding of a natural gas shortage in 1972 that can no longer be supported. Moreover, with the enactment of the NGPA and its price incentives, tax incentives are no longer necessary to encourage gas exploration. Additionally, to the extent these tax incentives accrue to pipeline companies with no gas exploration activity, the current treatment is especially egregious. For example, ANR Pipeline Company, the supplier of two-thirds of MichCon's natural gas, divested itself of its exploration activity in 1983, however, it continues to enjoy the benefit of all the investment tax credits it generates on property additions totally unrelated to natural gas exploration.

Finally, Congress should pass legislation that would mitigate the adverse effects of the "rates under bond" provision in the Natural Gas Act. Under that provision there is no limitation on the size of rate increases that pipelines can place into effect. The Commission can suspend them for up to five months, but after that time they go into effect subject to refund. Moreover, a pipeline can file a new rate increase before its last one is approved or disapproved, and, in that way, collect, for years, rates which have no relationship to what the Commission ultimately finds to be just and reasonable. Since 1981 many of the major interstate pipelines have refunded, as a result of such general rate increase filings, in excess of one billion dollars to its customers.

Mr. John W. Sprague
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Refunds, however, are of small consolation because consumers are denied the use of their money, and those that can switch to cheaper alternate fuel do so. Consequently, this increases the fixed cost burden on those who remain on the gas distribution system.

In conclusion, the dynamics of energy use and the natural gas industry have changed considerably since the enactment of the NGA and the NGPA. However, federal regulation, fostered by this legislation, has not responded appropriately to these changes. Consequently, consumers and gas distributors have suffered while interstate pipelines have received inordinant returns on their investments. Accordingly, the interstate pipeline industry should be restructured to make it more responsive to the market place. This can only be accomplished by requiring interstate pipelines to assume a reasonable amount of marketing risk and by providing incentives for them to change their gas contracting practices. Congress should take the initiative in bringing about this restructuring.

Very truly yours,

ARG/at

cc: Robert Andros

APPENDIX II

ANR Pipeline Company
An American Natural Resources Company

P. CHRISMAN IRIBE
Vice President
Planning

October 19, 1984

Mr. Robert Andros
General Accounting Office
100 Indiana Avenue, N.W.
Room 308
Washington, D.C. 20001

Dear Mr. Andros:

Thank you for the opportunity to comment on GAO's draft report "Natural Gas Price Increases in Detroit." The report is objective and accurately sets forth the basic reasons underlying gas price increases in Detroit for the two years in question.

As you correctly stated, FERC does not guarantee the company a specific return on common equity, but instead provides the opportunity to earn an equitable return on its investments considering among other things, business risks and the return in the market place provided other forms of capital, mainly long-term debt and preferred stock of the stated company. Items that affect the Pipeline's actual return on equity but not necessarily controlled by the FERC are: 1) methods of accounting, 2) earnings provided from tax write-off (mainly ITC), and 3) earnings of subsidiaries.

Of the 13.5% return on equity achieved in calendar year 1981 versus the allowed return of 13.125%, 2.4% was attributable to ITC and the earnings of a non-consolidated subsidiary. In 1983, these same items contributed 1.9% to the actual return of 18.9% versus an allowed return of 14.75%. In addition, the 1983 return included 2.2% attributable to the settlement of prior rate case issues, a ruling in June 1983 by the Supreme Court for the pricing of Company-owned production and the unanticipated severe weather sales in the last two weeks of the calendar year. With these adjustments, ANR Pipeline earned on a comparable FERC allowed basis 11.1% in 1981 and 14.8% in 1983.

500 Renaissance Center, Detroit, Michigan 48243 • (313) 496-3827

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With the purpose of your analysis and report in mind, I would like to emphasize that the days of rapidly rising gas prices are behind us. Since the winter of 1982-83, due to actions taken by pipelines, contractual price and take concessions by producers and Canadian suppliers and increasing gas sales, many pipelines, ANR among them, have actually reduced the gas price to distributors.

Sincerely,

P. Chapman Taibe

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