

Service Date: April 23, 1980

DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

* * * * *

IN THE MATTER of the Application by)	UTILITY DIVISION
MONTANA-DAKOTA UTILITIES CO. to)	
adopt increased rates for natural gas)	Docket No. 6695
and electric service in the State of)	
Montana.)	Order No. 4635

APPEARANCES

FOR THE APPLICANT:

JOSEPH R. MAICHEL and M. FOSS, Attorneys at Law, 400 West 4th Street, Bismarck, North Dakota 58501, appearing on behalf of Montana-Dakota Utilities Company

INTERVENORS:

RICHARD GANULIN, Attorney at Law, Montana Legal Services, 510 1st Avenue North, Great Falls, Montana 59401, appearing on behalf of Action for Eastern Montana

CAROLYN S. HAZEL, Attorney at Law, P.O. Box 2197, Houston, Texas 77001, appearing on behalf of Conoco, Inc.

JEROME ANDERSON, Attorney at Law, of the firm of Anderson, Brown, Gerbase, Cebull & Jones, P.C., 100 Transwestern Building, Billings, Montana 59101, appearing on behalf of Pierce Packing Co., The Lovell Clay Packing Company, Midland Empire Packing Co., Midland Foods Distributing Co., and Midland Foods, Inc.

JEROME ANDERSON for WILLIAM C. LEAPHART, Attorney at Law, 1 North Last Chance Gulch, Helena, Montana 59601, appearing on behalf of Great Western Sugar Company

JAMES C. PAINE, Montana Consumer Counsel, 34 West 6th Avenue, Helena, Montana 59601

FOR THE COMMISSION:

EILEEN E. SHORE, Staff Attorney

BEFORE:

GORDON E. BOLLINGER, Chairman
CLYDE JARVIS, Commissioner
THOMAS J. SCHNEIDER, Commissioner
JAMES R. SHEA, Commissioner
GEORGE TURMAN, Commissioner

FINDINGS OF FACT

PART A

General

1. Montana-Dakota Utilities Company (MDU or Applicant) is a public utility furnishing electric and gas service to consumers in the State of Montana.
2. Applicant's petition, filed July 18, 1979, requests additional revenues of \$3,627,780 for natural gas service and \$2,276,513 for electric service .
3. A notice of prehearing conference was given on July 24, 1979, and a prehearing conference was held on August 3, 1979, and rules for the disposition of this case were formulated.
4. On August 7, 1979, a Procedural Order was issued.
5. The hearing was split, Phase I to consider the revenue requirement and natural gas rate design and Phase II to consider electric rate design and Utility and Merchandising Service issues. This order covers only Phase I.
6. A notice of public hearing was given on December 21, 1979.
7. On January 22, 1980 at 10:00 a.m. pursuant to the notice, a hearing was held in Room 3043, Federal Building, U.S. Courthouse, 316 North 26th Street, Billings, Montana, and an evening meeting was held at the same location at 7:00 p.m. on Wednesday, January 23, 1980. Public hearings were also held pursuant to notice, in Hardin and Glendive, Montana on February 6, 1980; Forsyth, Miles City and Glasgow, Montana on February 7, 1980.

8. At a regular agenda meeting on February 4, 1980, the Commission directed the staff to delete the natural gas customer service charge of \$4.00 when preparing the final order on natural gas rate design.

PART B
Capital Structure and Associated Costs
Electric Utility

CAPITAL STRUCTURE

1. Applicant proposed the following capital structure and associated costs:

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-Term Debt	167,196,000 (54.74%)	8.276%	4.53%
Preferred Stock	35,100,000 (11.49%)	6.833%	.79%
Common Stock	<u>103,149,000 (33.77%)</u>	13.75%	<u>4.64%</u>

2. Montana Consumer Counsel (MCC) proposed the following capital structure and associated costs:

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-Term Debt	88,502,000 (59.27%)	7.87%	4.67%
Preferred Stock	18,179,000 (12.17%)	6.93%	.84%
Common Stock	<u>46,651,000 (28.56%)</u>	12.85%	<u>3.67%</u>
	149,332,000 100.0%		9.18%

The procedure followed by MCC is to allocate debt and equity capital between gas and electric operations in proportion to rate base. Pollution control notes and REA mortgage notes are assigned to electric operations.

3. The two proposals are reconciled below.

	<u>Long-Term Debt</u>	<u>Preferred Stock</u>	<u>Common Stock</u>
PER MCC	88,502,000	18,179,400	42,651,000
	86,268,000 (1)	17,720,600 (1)	60,498,000 (1)
	(7,475,000) (2)	800,000 (2)	
	<u>(99,000) (3)</u>	_____	_____
PER MDU	167,196,000	35,100,000	103,149,000

- (1) MDU did not split its capital structure between gas and electric utilities as did MCC. The gas portion is added back here.
- (2) Retired in 1979 and deducted in MDU's presentation.
- (3) 6.2% pollution control bond difference carried by MCC.

4. The Commission accepts the following capital structure:

<u>Long-Term Debt</u>	<u>Preferred Stock</u>	<u>Common Stock</u>
88,502,000	18,179,000	42,651,000
59.27%	12.17%	28.56%

The above capital structure recognizes the issuance of \$40,000,000 in pollution control bonds and \$13,850,000 of common stock in 1979. The elimination of investment in subsidiaries by MCC was identical to the entry made by MDU.

The capital structure is split between gas and electric in the same proportion as the rate base to satisfy the matching principal.

RETURN ON DEBT

5. In splitting the capital structure, 50.639 percent of the long-term debt is allocated to electric operations. MCC allocated REA notes and pollution control bonds to electric operations also. The Commission accepts the above allocation and finds the following cost of long-term debt appropriate:

	<u>Amount</u>	<u>Weighted Cost</u>	<u>Cost</u>
REA and Pollution Control Notes	31,408,000 (35.49%)	7.09%	2.52%
Other Debt Allocated to Electric Operations	<u>57,094,000 (64.51%)</u>	8.29%	<u>5.35%</u>
	85,502,000 (100%)		<u>7.87%</u>

RETURN ON PREFERRED STOCK

6. In splitting the capital structure 50.639 percent of the preferred stock \$18,179,000 is allocated to electric operations

The Commission accepts the above allocation and finds the cost of preferred stock as proposed by the MCC, i.e., 6.93 percent appropriate.

RETURN ON EQUITY

7. To determine the appropriate cost of equity, the Commission has examined the points of contention raised by all parties with due care and diligence. This is, of course, an extremely subjective area, the outcome of which can hinge upon differing applications of statistical techniques, the choice of companies having comparable risks for use in discounted cash flow (DCF) analysis, etc. The parties are called upon to make numerous judgments .

8. An area requiring significant judgment is the selection of companies to establish the "comparable earnings for comparable companies" criteria set forth in the famous Hope and Bluefield cases In these decisions the United States Supreme Court provided a general framework for the determination of fair rate of return. in terms of two criteria

- A) Return sufficient to maintain the integrity of existing investment as well as to attract additional capital.
- B) Return on comparable investments.

These tests represent the judiciary's efforts to provide an objective basis for determination of an abstract concept. The practical details of the application of these criteria have been left to the regulatory agencies.

There does not seem to be any real conflict between the two standards. Rather, they appear to be merely different expressions of the same basic concept, since the return available from alternative investment opportunities essentially determines the return necessary to enable an enterprise to attract and hold capital.

9. Alternative investments comparable to MDU have been set forth by both MDU witness Wayne Monteau and MCC witness Carolyn Smith.

10. Monteau chose 16 utilities selected on the basis of their geographic proximity to MDU's service territory. (Trans. p. 370, II. 2-4.) These utilities are used in his comparable earnings analysis and his discounted cash flow analysis. Monteau also selects 22 highly rated industrials as comparable to MDU for use in his comparable earnings analysis.

11. Smith chose to use all the electric and combination utilities traded on the New York Stock Exchange. (Direct, p. 31, II. 13-16.)

12. The Commission expressed concern in MDU's last general rate case, Docket No. 6567, that 11 of Monteau's 16 utilities are regulated by the states of Iowa and Wisconsin. The order in that docket stated on page 9: "The small sample size and the high percentage of Iowa and Wisconsin regulated utilities would replace the judgment of the Montana Commission with

that of the Commissions of the above mentioned states, if accepted. " In addressing the importance of geographic location Dr. Smith states:

Mr. Monteau's criterion is merely that the sixteen companies are located in the same part of the country served by MDU, and it is doubtful that investors differentiate on the basis of location in "same or contiguous" states. Location itself, except as a proxy for other variables which may be related to risk (perhaps such as trends in fuel cost or customer mix), is unrelated to capital costs. The market for money is nationwide, and centers upon the New York Stock Exchange. (Direct, p. 69~)

It should also be noted that one fourth of Monteau's 16 companies are not traded on any major exchange. (Smith Direct, p. 69.) It is questionable that these companies represent alternative investment to opportunities to MDU, which is traded on the New York Stock Exchange.

13. Smith's companies, on the other hand, represent a large, unbiased sampling of all the alternative electric and combination utilities traded on the New York Stock Exchange.

The inclusion of combination utilities is most likely a liberal offering by Dr. Smith. Gas operations of these utilities are many times afforded the opportunity to earn higher return by regulatory agencies, just as is done in this order.

The Commission, therefore, finds Dr. Smith's companies to be the best comparable alternative utility investments.

14. The 22 highly rated industrial firms set forth by Monteau are of dubious value for use in quantifying companies of comparable risk to MDU for several reasons:

- A. Industrial companies operate in a competitive environment which is much riskier than that faced by monopolies.
- B. Monteau's industrials, for the most part, cannot be purchased for book value, so the return earned by them in the test year is not available to the marginal investor.

(Smith Direct, p. 71, Trans. p. 489.)

C. Monteau does not demonstrate why these particular A+ rated industrials were chosen. "Stability" was cited as a reason, but Dr. Smith's beta and price volatility analysis (two measures of stability) showed these companies to be less stable and therefore riskier than utilities as a whole and MDU in particular. (Smith Direct, pp. 70, 71.) The Commission for these unacceptable.

15. The results of Mr. Monteau's Comparable Earnings Study and Discounted Cash Flow analysis are based on groups of companies the Commission has found to be uncomparable to MDU. Because of this, the Commission rejects the results.

16. Mr. Monteau has conducted a DC F study on MDU alone which relies upon earnings, dividends and book value growth for 3 five year periods and a ten year period as well as dividend yield for February-April, 1979. Dr. Smith points out on page 24 and 25 of her direct testimony that it is fallacious to use a single company in conducting a DCF analysis:

One problem with using data only from a single company is that these data may give an extreme and invalid indication of the true investor expectations for the future growth of that company. This problem arises because the growth rates actually achieved in the past by any one company are the result of many separate influences on the company and its financial situation. If there is an unusual combination of especially favorable factors in the past record for one company, then the past growth rates achieved by that company may not be realizable in the future; and -- even more important -- investors will not expect these past growth rates to be realized in the future. Conversely, if there is an unusual combination reasons finds Monteau's 22 industrials of especially unfavorable factors, then the growth rates achieved for the affected company in the past may be far below what investors are expecting under more normal conditions in the future. In each instance, investors can and do correct for the distortions in the picture of past growth rates for the any particular company, by basing their growth expectations for that company in part upon data other than the company's own growth history. Data relating to other comparable utilities are data that investors would be most likely to consider in formulating their expectations for any one utility company; and, therefore, analysts should also look to the data on comparable companies in their analysis.

Another problem with using data from only a single company is that the individual past growth rates may be erratic. As shown in Exhibit _ (CMS-3), MDU (like most other utilities) has experienced year-to-year fluctuations in earnings, book value, and dividend growth in recent years. As a result, growth estimates for MDU, based upon MDU's own experience, would be very sensitive to the selection of a time period . In contrast, the averages of the growth rates for many companies are much more stable, because the events that affect only one or a few companies are offset or diluted by the large number of other companies in the analysis. The use of these averages thus offers much better information about long-term investor expectations than does reliance on data for a single company.

The Commission accepts this reasoning.

17. Dr. Smith's DCF analysis, based on the 96 comparable utilities including MDU is accepted because:

- A. Her computation of dividend yields takes into account the effects of the temporary nature of high interest rates and the effect of the Three Mile Island incident on utility prices. (Smith Direct, p. 32.)
- B. Her computations of earnings, dividends and book value growth. In order to estimate the present worth of future growth, growth rates must be examined in light of the present and recent past because they are our only factual guide to the future. Periods of one year through ten years in length used to establish growth are reasonable because different investors look at different time periods in making investment decisions. Statistically, the shorter periods are less significant and are weighted thusly through the use of correlation coefficients. (Smith Direct, p. 33.)
- C. She quantifies the difference in risk between her comparable companies and MDU through the use of a mathematical model. This model merely sets forth market place perceptions in risk differential. (Smith Direct, p. 39.)

- D. Dr. Smith conducts a comparable earnings study using her comparable companies to test the reasonableness of the DC F study.
- E. Dr. Smith also conducted a study using all companies with beta coefficients similar to MDU (CMS-12). Betas are a measure of price stability and a measure of risk. The results of Smith's DCF analysis are reasonable when compared with companies having similar beta values.

18. Several areas of contention remain:

- A. Monteau's Market Appraisal Study is not accepted. Although it is based on several large groups of utilities, the data used is only for 1978. Dr. Smith pointed out, and the Commission accepted above, the fallacy of using only one short period in evaluating investments. Also on pages 74-80, Smith points out that the statistical techniques used by Monteau may not be valid.
- B. Smith's proposed premium of 3 percent above book value for expenses associated with stock issuance is accepted. Market pressure is said by Smith to account for very little, if any, of this premium. The Commission agrees with this position because:

- (1) CMS-14 demonstrates that market pressure is as likely to be negative as it is to be positive.

- (2) A 1972 article in the Journal of Business supports this conclusion.

(Smith Direct, p. 59.)

Monteau, on the other hand, concludes that these costs are 7.5 percent -- based on studies performed and observed. However, none of these studies are presented in evidence.

19. Based on the findings for the cost of long-term debt, preferred stock and common equity, the following capital structure and costs are accepted for the electric utility:

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-Term Debt	59.27	7.87	4.67
Preferred Stock	12.17	6.93	.84
Common Stock	<u>28.56</u>	<u>3.67</u>	<u>3.67</u>
	100%	9.18%	9.18%

Capital Structure and Associated Costs

Gas Utility

CAPITAL STRUCTURE

20. MDU proposes the following capital structure and associated costs:

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-Term Debt	167,196,000 (54.74%)	8.159%	4.47
Preferred Stock	35,100,000 (11.49%)	6.833%	.79
Common Stock	<u>103,149,000 (33.77%)</u>	14.25%	<u>4.81</u>
	305,445,000 100.0%		10.07%

21. MCC proposes the following capital structure and associated costs:

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-Term Debt	86,268,000 (52.45%)	8.29%	4.34
Preferred Stock	17,721,000 (10.77%)	6.93%	.75
Common Stock	<u>60,498,000</u> (36.78%)	13.00%	<u>4.78</u>
	164,487,000 100.0%		9.87%

22. The Commission accepts the following capital structure for the same reasons enumerated in electric operations.

<u>Long-Term Debt</u>	<u>Preferred Stock</u>	<u>Common Stock</u>
86,268,000	17,721,000	60,498,000
52.45%	10.77%	36.78%

RETURN ON DEBT

23. In splitting the capital structure, 49.361 percent of the long-term debt is allocated to gas operations. The Commission accepts the allocation and finds 8.29 percent to be the cost of long-term debt.

RETURN ON PREFERRED STOCK

24. In splitting the capital structure, 49.361 percent of the preferred stock is allocated to gas operations. The Commission accepts the allocation and finds 6.93 percent to be the cost of preferred stock.

RETURN ON EQUITY

25. The Commission finds the following with regard to gas utility common equity:

A. The Applicant asks that the return on gas utility equity be set at 14.25 percent which is .5 percent more than the return proposed for the electric utility equity. The Commission feels that an increment of .5 percent is not warranted due to the effect of MDU's gas cost tracking applications.

B. MCC has recommended a return on common equity for gas operations of 13.00 percent. In its determination of the proper return on equity for electric operations, the Commission discussed and approved the merits of MCC's DCF analysis. Due to gas cost tracking applications noted above, an increment of .15 percent is accepted as the proper reflection of the cost difference between gas and electric equity.

26. The cost of gas equity is found to be 13 percent.

27. Based on the findings for the cost of capital of long-term debt, preferred stock and common equity, the following capital structure and costs are deemed appropriate:

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long-Term Debt	52.45%	8.29%	4.34
Preferred Stock	10.77%	6.93%	.75
Common Stock	36.78%	13.00%	<u>4.78</u>
			<u>9.87%</u>

PART C

Jurisdictional Separations,
Cost of Service, Rate Base

1. Electric and gas cost of service, rate base and jurisdictional allocation witnesses for MDU include:

Mr. David P. Price, MDU's Vice President of Gas Operations, who testified to and sponsored exhibits concerning gas operations, the curtailment plan and cost of gas. (Direct Testimony, Exhs. B-1 through B-6 and Rebuttal Testimony Exhs. B-7 through B-10.)

Mr. W. W. Kroeber, MDU's Vice President of Electric Operations, who testified to and sponsored exhibits concerning electric operations and fuel costs. (Direct and Rebuttal Testimony, Exhs. C-1 through C-6.)

Mr. Donald R. Ball, Senior Rate Analyst for MDU, who testified to and sponsored exhibits concerning jurisdictional separation, annualization of revenues, income taxes, revenues and expenses, and rate base. (Direct and Rebuttal Testimony, Exhs. F-1 through F-40, G-1 through G-14, H-1 and H-2, 1-1 through 1-6, DRB-1 and DRB-2.)

Mr. John P. Weir, President of the Paul Weir Company, who testified to and sponsored exhibits concerning the value of coal reserves. (Rebuttal Testimony, Exh. JPW-1.)

Mr. Hobert Orton, Vice President for Zinder-Neris, Inc., who testified to and sponsored exhibits concerning the price of coal paid by MDU to Knife River Coal Mining Company. (Rebuttal Testimony, Exhs. HO-1 through HO-5.)

2. Corresponding witnesses sponsored by the Montana Consumer Counsel are:

Mr. George F. Hess, Consulting Engineer, who testified to and sponsored exhibits concerning cost of service, rate base and jurisdictional separations. (Exh. D.)

Dr. John W. Wilson, President of J. W. Wilson and Associates, who testified to and sponsored exhibits concerning the price of coal paid by MDU to Knife River Coal Mining Company. (Exhs. G and H .)

3. Don Ball proposed a jurisdictional allocation method for the gas utility that corresponds to that conditionally approved by the PSC in MDU's last general rate case, Docket No. 6567. A description is included in pages 5-7 of his rebuttal testimony:

Q. Mr. Ball, taking the allocation of gas supply first, please state how gas supply costs were allocated by MDU and why they were allocated as they were.

A. Gas supply costs were all rolled together, with the exception of those for Minnesota, and allocated to each area based upon each areas annual consumption. This allocation procedure recognizes that gas discovered and produced at any point on the system benefits the entire system and all customers every where on the system. This procedure also reflects the fact that gas is universal, interchangeable and mobile. Since gas is

mobile, it can be made available, either physically or by displacement to areas that require it. Because gas is universal and interchangeable, one Mcf is as good as any other Mcf and therefore gas produced at any point on the system or gas produced anywhere that can be made available to the system is of benefit.

Q. Does Mr. Hess agree with the allocation of gas supply costs?

A. Yes, he does.

Q. Mr. Ball, turning now to the allocation of physical facilities, please describe the basis of allocation of facilities located in each of the operational areas listed in your direct testimony and Mr. Price's rebuttal testimony.

A. The operational areas, for purposes of allocation and jurisdictional reporting, are as follows:

- 1) Wyoming - Big Horn Basin
- 2) Montana
- 3) North Dakota - Bismarck Wes.
- 4) North Dakota - Progress 70-72
- 5) South Dakota
- 6) Wyoming - Colony
- 7) Wyoming - Sheridan
- 8) Crookston, Minnesota

Since Minnesota is a completely isolated system, no allocation of costs or facilities from Minnesota is included in the four-state integrated system area.

Likewise, the North Dakota - Progress 70-72 facilities and expenses are assigned directly to North Dakota since there is no gas supply and those facilities and expenses do not benefit customers located elsewhere.

The Sheridan, Wyoming facilities are directly assigned to Wyoming since those facilities are not used and useful in providing service to customers located elsewhere on the system.

Facilities located in the Wyoming-Big Horn Basin area (1), are allocated to the areas numbered 1-6.

Facilities located in Montana (2), North Dakota-Bismarck West (3), South Dakota (5), and Wyoming-Colony (6), (the integrated system) are allocated to the areas numbered 2-6.

4. The PSC's conditional approval of this allocation method was based on the testimony of George Hess. Finding of Fact No. 65 in Docket No. 6567 states:

The Commission accepts the jurisdictional allocation methods recommended by MDU with the caveat that the issue will be scrutinized closely in any future rate proceeding. Any restraint by the Commission in this instance to make jurisdictional allocation changes is based on the belief that the company should be provided an opportunity to work out a satisfactory solution to this problem without leaving a portion of its costs unrecovered because of differing allocation methods used in the various jurisdictions in which it operates.

In this proceeding Hess proposes including Wyoming-Big Horn Basin (1) and Wyoming-Sheridan (7) in the integrated system allocation. The integrated system under Hess' proposal would then consist of Montana (2), North Dakota-Bismarck West (3), South Dakota (5), Wyoming-Colony (6), Wyoming-Sheridan (7), and Wyoming-Big Horn Basin (1).

5. Ball disagrees with this approach: "MDU cannot, in good conscience, propose an allocation methodology that shifts to any state the burden of plant neither used nor useful to that state's customers." (Ball Rebuttal, p. 11.)

6. Through cross-examination Mr. Paine establishes that integrated system facilities (plant) are useful to Wyoming customers. He first establishes that Montana and integrated system gas is useful to Wyoming ratepayers through displacement:

A. Right now Kansas-Nebraska, is up in the Bowdoin area. We can by displacement take gas from the Bowdoin area that is not ours -- it is Kansas Nebraska's -- and we can take their gas in the Bowdoin [Montana] and give them our Wyoming gas in place of that. That is a displacement arrangement which now exists, but did not exist back in 1975.

Q. Isn't it in essence sending gas down to Wyoming by displacement?

A. In essence it is, yes. But, the gas flow is still out of Wyoming regardless of that displacement.

Q. I was of the impression from Mr. Price's testimony that gas never got down to Wyoming other than what originated in Wyoming.

A. It doesn't.

Q. By displacement it does?

A. Only by displacement, yes. (Transcript p. 516, Cross-Examination of Mr. Ball.)

Q. Is it your position that gas discovered and produced in Montana is of benefit to Wyoming customers today?

A. Yes.

Q. How does it benefit Wyoming customers today?

A. It benefits Wyoming customers in that any Mcf that can be produced in Montana or North Dakota or South Dakota requires one less Mcf of the Wyoming gas to flow out of State of Wyoming.

Q. Is gas produced in Montana used and useful to Wyoming customers today?

A. It is useful, yes. It is not physically used. (Transcript pp. 518, 519, Cross-Examination of Mr. Ball.)

7. He then establishes that displacement could not occur without plant to gather and transport the gas:

Q. As to mobility of gas on the MDU system, gas is moved in no other manner except by pipe line, is that correct?

A. It is moved by displacement also as I said before.

Q. But again, Mr. Price, you can't move it by displacement without a pipe line, can you?

- A. Well, it can be someone else's pipe line. It doesn't necessarily have to be ours, that is what I am saying.
- Q. That is the only distinction and still requires a pipe line.
- A. That is one distinction, yes.
- Q. Are there others?
- A. Well, other distinctions in what regard?
- Q. I don't know. You were the one that indicated that that was one distinction. I was just making an inquiry as to what the others were.
- A. No, I don't know of any other way to transport gas. (Transcript pp. 231, 232, Cross-Examination of Mr. Price.)

Mr. Price states on page 233 of the transcript that using someone else's pipeline is a cost also (which would be allocated to the areas to which a benefit is provided):

- Q. When someone else does transport gas for MDU they charge you for that, do they not?
- A. Generally yes.

8. The Commission finds MCC's reasoning to be persuasive. Gas purchased any place on the integrated system is useful to ratepayers in Wyoming because this gas requires one less Mcf of Wyoming gas to flow out of the state of Wyoming. Montana produced gas is of additional benefit to Wyoming ratepayers because it is the cheapest gas on the MDU system (13.44 per Mcf). When this gas is used in computing the MDU system average cost of gas, the cost to all MDU ratepayers is decreased. (See transcript pp. 242-244.) It also becomes unnecessary to purchase new, high cost gas.

9. MCC's cross-examination of Mr. Price establishes that plant facilities are needed to transport gas to MDU customers, whether by displacement or directly. It follows that if Montana and integrated system gas is of benefit to Wyoming customers (and visa versa) that Montana and

integrated system plant is useful to Wyoming ratepayers. It flies in the face of reason to suggest that gas would be useful to any ratepayers if it were not connected to the system. If the plant facilities needed to connect integrated system gas to the system makes that gas useful to both integrated systems and Wyoming customers, why then should the plant facilities not be allocated to both ratepayers? The Commission finds that they should be allocated to both and therefore accepts Hess' allocation method.

10. Jurisdictional allocation of electric demand related costs is based on an area's contribution to the sum of 12 monthly coincident peaks. Energy costs are based on kilowatt hour sales. In view of the fact that this subject is not controverted or otherwise fully explored on the record, the Commission accepts the Applicant's allocation methodology.

11. The issue of Montana-Dakota electric generating fuel (coal) expense was reviewed in great depth in MDU's last general rate application, Docket No. 6567. The Commission finds that little has changed since that proceeding .

12. Knife River Coal Mining Company, a subsidiary owned 100 percent by MDU, was earning more than 22 percent on its total net investment in coal mining activities at year-end 1978. (Wilson Direct, p. 111.) This is a matter of concern to the Commission. Since MDU stockholders own Knife River, they are, in effect, selling coal to the ratepayers of MDU which earns them this rate of return. The Commission finds this return evades the spirit of regulation. In a May, 1978 report on the coal industry, the U.S. Department of Justice states: "The vertical integration by utilities into coal may provide them an opportunity to evade rate-of-return regulation and thus capture monopoly profits in their upstream coal operations. " (Wilson Direct, p. 102.)

To parrot an example from page 24 of Order No. 4467 (MDU Docket No. 6567):

What if MDU stockholders had decided to form a subsidiary corporation that would own all the electric generating facilities and sell

the power to the utility parent? These facilities of course, would not be dedicated to the public convenience and would, therefore, not be regulated. Would MDU ratepayers be required to pay MDU stockholders (through the subsidiary) the going rate for electricity regardless of the rate of return being earned on these assets by the subsidiary?

The Commission feels that the relationship between Knife River and MDU is akin to the above situation. The Commission will not attempt to regulate Knife River. However, simply because Knife River has been legally separated from MDU does not mean MDU's ratepayers should be subjected to excessive coal prices that would not otherwise exist if MDU and Knife River were a single corporation.

The Commission's only method of protecting the ratepayers in this proceeding against these excessive prices is, of course, to limit the amount MDU will pay to Knife River for coal.

13. The method the Commission uses to determine the amount of the excessive coal charges levied by Knife River is set forth in Exhibit D, JW-20, p. 3 of 3.

14. In using this method, the percentage of Knife River sales attributed to MDU is 30 percent. This consists of direct sales of 16.8 percent and indirect sales of 13.2 percent. The indirect sales are attributable to MDU's 20 percent participation in the Big Stone generating station. Otter Tail Power Company, the operating agent for the Big Stone plant, is the direct purchaser. This does not remove the fact, however, that 20 percent of the coal expense from this plant is being charged to MDU ratepayers.

15. In Exhibit D (JW-20, p. 1 of 3) Dr. Wilson has presented a listing of several companies comparable to Knife River to establish coal industry earnings -- a guide used in determining what return Knife River would be earning if it operated in a competitive environment. Mr. Orton analyzes these companies and determines that Falcon Coal Company in Eastern Kentucky is the most comparable to Knife River because it uses large efficient equipment in a strip mining operation (Orson Rebuttal, p. 46). North American Coal also uses large equipment and has strip mining operations in the same county as Knife River. Mr. Orton states: "For mines

to be truly comparable, they should be located in the same region and their mining parameters should be approximately the same." (Orson Rebuttal, p. 50.) If these are the criteria, North American Coal would compare more closely to Knife River than Falcon. North American's average rate of return for the period 1970-1978 has been 5.35 percent while Falcon's has been 17.73 percent for the same period.

16. Knife River is probably less risky than most of Wilson's comparables. A common measure of financial risk is the percentage of debt in a corporate capital structure. In the event of a dissolution equity holders are usually last to be reimbursed for their investment. Holders of debt instruments have a higher priority. In these terms Knife River has very little equity risk because it has very little debt. On the other hand North American's Capital Structure is about 86 percent debt. A common measure of business risk is market stability. It is obvious from the fact that Knife River holds long-term contracts with its parent and its parent's generating partners (these contracts account for 84 percent of Knife River's output - Transcript p. 272) that Knife River has attained an usually high level of market stability:

MDU's coal purchases and those of its generation partners are now and have always been the life blood of Knife River. MDU builds its generating plants in geographic proximity to Knife River's coal mines. Any defense of Knife River's excessive profits on grounds that no one else is offering to deliver coal cheaper is obviously misleading in that the argument completely ignores the fact that the Company's electric plant and coal mine developments have always gone hand-in-hand in the first place. (Wilson Direct, p. 110.)

17. The Commission finds that Wilson's comparable companies (whose composite average return is about 12 percent, present a sound, if not conservative basis for determining MDU's coal purchase expense. However, in view of the fact that Dr. Wilson has recommended a 13 percent earnings rate (which generally conforms to Dr. Smith's common equity return recommendation for MDU's electric operations), the Commission accepts 13 percent.

18. Several points raised by MDU remain to be answered:
 1. MDU has suggested that the transfer price of coal between MDU and Knife River be examined, and if it appears to be competitive, no adjustments be made. The Commission sees several disadvantages to this approach. First, the ratepayer would be required to pay the going rate for coal regardless of the rate of return being earned by MDU shareholders as discussed above. Second, and most importantly, absolute comparability between coal prices is virtually impossible to determine due to a multitude of variables in mining operations, chemical composition of coal, transportation and other factors. For example, the composition of some coal may dictate the need for a more expensive boiler than other coal; which would be a cost to the utility but may not be reflected in the price per ton for coal.

Mr. Orton points out some of these difficulties on page 308 of the transcript:

Once you have selected a site for your plant and designed your boiler, your coal supplier is defined. They can't be too far away and they have to furnish the type of coal that you burn, and so you will find that that eliminates every place in the country that this is done. It eliminates a large large number of potential suppliers .

Finally, the bargaining between MDU and Knife River is not at arms length. Any time a unitary entity bargains with itself, the results tend to be different than the results of bargaining between unrelated entities. (J.W. Wilson Direct, p. 109, 11. 21-25, p. 110, 11. 1-17.)

2. MDU has suggested that, if the Commission intends to regulate Knife River's rate of return that the fair market value of its reserves be used in determining that rate of return. First, the Commission is not regulating Knife River's rate of return. Rate of return has merely been used as a method of determining excessive coal prices.

Secondly, and as has been stated above, the Commission does not feel that MDU's ratepayers should be subjected to coal prices that would not exist if MDU and Knife River were a single corporation. Therefore, in computing the amount MDU will pay Knife River for coal, the Commission has used the amount of Knife River's capitalization which closely matches the original cost depreciated valuation of its assets; the same method used in valuing utility property subject to regulation. This method of reporting is consistent with the financial reporting of all corporations, including natural resource companies.

Dr. Wilson points out the fallacy of using the market value approach on page 108 of his direct testimony:

That approach to testing the reasonableness of Knife River's profits would be circular and unreliable because the fair market value of the property is simply a capitalization of coal profits and coal prices and therefore does not provide an independent basis for testing either profits or prices. That is, the projected market value of coal reserves is determined by subtracting projected production costs from projected market prices (or contract prices) and discounting the remainder to allow for the cost of money; the balance is the present worth or projected market value of the reserves. This calculated market value of the reserves therefore does not prove that the coal prices are fair in the first place, and it cannot provide an independent test of the reasonableness of the prices or the profits afforded by those prices.

19. Various other adjustments are made by the Applicant. Many have not been controverted by any parties to this proceeding, and have been reviewed by the Commission and accepted as bona fide or are accepted because the record is not complete enough to reject them. Areas where differences do exist between the parties include (items A, B and F pertain to the electric utility, items I, J and K pertain to the gas utility and items C, D, E, G and H pertain to both):

- A. Mr. Hess includes adjustments of purchased power costs, accumulated deferred income taxes, unamortized investment tax credits and accrued depreciation to reflect inclusion of the Glendive turbine for the entire test year. MDU included the Glendive turbine but failed to make the full range of adjustments to reflect its inclusion. Mr. Hess makes the needed adjustments and the Commission accepts them.
- B. Hess prices Big Stone participation sales at the most recent MAPP rate. Ball uses a price lower than this. Hess' sales for resale amounts are accepted. If these nonjurisdictional sales are made below cost, Montana ratepayers will ultimately share in paying the difference. (Hess Direct, p. 4, 11. 18-23.)
- C. Hess makes adjustments to labor costs, rate case expense, computer rental, payroll taxes and fringe benefits to reflect the latest company estimates acceptable for use in ratemaking. The Commission accepts these adjustments as being the latest pertinent information.
- D. Mr. Ball includes a one time charge of \$574,000 to establish a life insurance reserve required due to a change in risk management policy. the Commission finds that this reserve should most likely be provided by the stockholder. However, a similar reserve in Montana Power Docket No. 6618 was allowed to accumulate over a three year period. Similarly, Mr. Hess suggests the Commission allow MDU one third its requested amount here. The Commission accepts Mr . Hess' proposal.
- E. MDU includes an adjustment based on inflation rates to impute the effects of inflation on expenses not adjusted elsewhere. Hess disagrees with this adjustment on the basis it is not specifically known or quantifiably measurable with certainty.

The Commission finds this adjustment unacceptable for these reasons, as it did in Docket No. 6567.

- F. Hess reverses the Company's adjustment for increased Edison Electric Institute billings for research on the basis that the adjustment provides for growth in expenses without considering offsetting growth in revenues. The Commission agrees and accepts Hess' adjustment.
- G. Hess removes energy audit program expenses. The program is mandated by the National Energy Conservation Policy Act, but will not be initiated before late 1980 or 1981, if at all (MDU is the only major Montana energy utility that does not have in place a conservation program, despite inquiries by this Commission concerning this subject). The Commission finds these projected expenses to be outside the scope of the test year and accepts Hess' adjustment.
- H. Hess includes an adjustment for amortization of pre-1974 profit on reacquired debt. When a company acquires its own debt at a profit, this lowers the overall cost of that debt and should be accounted for in computing cost of debt or cost of service. The adjustment is therefore accepted.
- I. Hess makes an adjustment to reflect the most recent curtailment plan as agreed to by the Federal Energy Regulatory Commission staff and intervenors in the FERC curtailment case, Docket No. RP 76-91. This adjustment constitutes a known and measurable charge and is accepted by the Commission.
- J. Ball includes royalty expenses of \$270,754 on a total company basis to reflect a U.S. Geological Survey claim that royalties should be not paying the higher royalty expense at this time. The Commission accepts Hess' reversal of this adjustment.

The Company may apply to the Commission through its gas tracking procedure at the appropriate time for consideration of this matter.

- K. Hess substituted actual gas storage amounts for the nine months ending September 30, 1979 in lieu of the Company's year-end 1979 estimated storage amounts. The Commission finds that Hess' storage adjustment constitutes a known and measurable change, rather than a projection and accepts it on that basis.

20. The Commission finds the following results of operations for the electric and gas utilities:

Montana-Dakota Utilities Company
Electric Utility - Montana
Results of Operations
1978 Test Year
(000)

	Per Books (A)	Company Adjustments (B)	Adjusted Per Company (C)	Commission Adjustments (D)	Adjusted (E)
1. Operating Revenue	\$ 13,763	\$ (103)	\$ 13,660	\$ -	\$13,660
2. Operating and Maintenance Expenses					
3. Fuel and Purchased Power	3,617	570	4,187	(300)	3,887
4. Other	<u>3,960</u>	<u>735</u>	<u>4,695</u>	<u>(244)</u>	<u>4,451</u>
5. Total	<u>7,577</u>	<u>1,305</u>	<u>8,882</u>	<u>(544)</u>	<u>8,338</u>
6. Depreciation	1,662	61	1,723	-	1,723
7. Taxes Other Than Income	775	85	860	-	850
8. Federal and State Income Taxes					
9. Current	226	(1,046)	(780)	72	(708)
10. Deferred	351	(17)	334	31	365
11. Investment Tax Credits	625		625	163	788
12. Amortization of Investment Tax Credits	<u>(14)</u>	<u> </u>	<u>(14)</u>	<u>-</u>	<u>(14)</u>
13. Total Operating Expenses	\$ 11,242	\$ 388	\$ 11,630	\$ (278)	\$ 11,352
14. Operating Income	\$ 2,521	\$ (491)	\$ 2,030	\$ 278	\$ 2,308
15. Amortization of Pre-1974 Profit on Debt Reacquired at Discount				14	<u>14</u>
16. Total Available for Return					\$ 2,322
17. Rate Base	\$ 29,667	\$ 2,219	\$ 31,886	\$ (125)	\$ 31,761

18. Rate of Return

8.50%

6.37%

7.31%

Montana-Dakota Utilities Company
Gas Utility - Montana
Results of Operations
1978 Test Year
(000)

	Per Books (A)	Company Adjustments (B)	Adjusted Per Company (C)	Commission Adjustments (D)	Adjusted (E)
1. Operating Revenue	\$ 21,735	\$ 11,650	\$ 33,385	\$ 555	\$ 33,940
2. Operating and Maintenance Expenses					
3. Cost of Gas	14,807	4,520	19,327	413	19,740
4. Other	<u>7,128</u>	<u>1,483</u>	<u>8,611</u>	<u>(632)</u>	<u>7,979</u>
5. Total	21,935	6,003	27,938	(219)	27,719
6. Depreciation and Depletion	1,536	56	1,536	(60)-	1,476
7. Taxes Other Than Income	979	85	1,035	(43)	992
8. Federal and State Income Taxes					
9. Current	(1,963)	1,914	(49)	520	471
10. Deferred	401	(18)	383	(13)	370
11. Investment Tax Credits	250		250	(9)	241
12. Amortization of Investment Tax Credits	<u>(22)</u>	<u> </u>	<u>(22)</u>	<u>-</u>	<u>(22)</u>
13. Total Operating Expenses	\$ 23,116	\$ 7,955	\$ 31,071	\$ 176	\$ 31,247
14. Operating Income	\$ (1,381)	\$ 3,695	\$ 2,314	\$ 379	\$ 2,693
15. Amortization of Pre-1974 Profit on Debt Reacquired at Discount				16	<u>16</u>
16. Total Available for Return					\$ 2,709
17. Rate Base	\$ 36,891	\$ 4,215	\$ 41,610	\$(5,230)	\$ 35,876

18. Rate of Return

(3.74%)

5.63%

7.55%

21. The Commission finds the following revenue deficiencies for the electric and gas utilities:

1.	<u>Electric Utility</u>		
2.	Electric Utility Rate Base	\$31,761	
3.	Recommended Rate of Return	9.18%	
4.	Recommended Return		\$ 2,916
5.	Amount Available for Return		<u>2,322</u>
6.	Income Deficiency		594
7.	Revenue Deficiency		<u>1,180</u>
8.	<u>Gas Utility</u>		
9.	Gas Utility Rate Base	\$35,876	
10.	Recommended Rate of Return	9.87%	
11.	Recommended Return		\$ 3,541
12.	Amount Available for Return		<u>2,709</u>
13.	Income Deficiency		\$ 832
14.	Revenue Deficiency		<u>\$ 1,653</u>

22. MCC witness Hess' schedules support these revenue deficiencies. For detail supporting the above adjustments see Exhibit D (GFH-2, Schedules 2, 4 and 5 A-5 I).

Natural Gas Rate Structure

23. Three expert witnesses presented testimony addressing the issues involved in natural gas rate design. In addition, three industrial intervenors and a large number of MDU's residential and commercial customers voiced their concerns about the structure of natural gas rates. The range of design alternatives presented and the level of public participation have allowed the Commission to reach a decision which gives proper recognition to all aspects of utility rate setting.

24. Through the testimony of its assistant treasurer, Lowell Gamble, Montana-Dakota Utilities proposed that the base rate be increased for those in each customer class and that the commodity charges be raised so that class revenues moved closer to costs of service. MDU did not attempt to equalize rates of return between classes; instead, industrial customers provided a higher return since industrial sales

involve greater risks and because the system was constructed to serve high-priority residential and commercial customers. (Direct Testimony of Gamble, p. 7.)

25. Dr. John Wilson was retained by the Consumer Counsel to present testimony on the proper design of natural gas rates. According to Dr. Wilson, for gas utility rates to be economically efficient, they

. . . should reflect economic costs. System costs should be allocated on the basis of what it actually costs to provide service to particular consumers at particular times. The marginal cost of gas supply should be a particularly important consideration in this regard. (Exh. G, p. 78.)

His testimony continues by arguing that these criteria are met by largely volumetric rate structures for natural gas service. By allocating costs on the basis of consumption and giving no weight to maximum demand, volumetric rates promote conservation of the commodity, natural gas, which is scarce rather than the transmission and distribution systems which presently have adequate capacity, in Wilson's opinion. After discussing the problems economists have justifying rolled-in and incremental pricing, Wilson states that the rates proposed by MDU are generally consistent with the volumetric pricing principles which he advocates. Two exceptions are found in the retention of customer charges (base rates) and growth of the commodity charge differential for interruptible industrial sales. Wilson prepared alternative rate schedules that would eliminate the customer charge and maintain the current interruptible discount.

26. Dr. Thomas M. Power is an economist whose rate design testimony was sponsored by Action for Eastern Montana. Like Wilson, Power argued that natural gas rates should reflect economic costs, specifically marginal costs:

Focus on the additional costs that behavior caused to be incurred and which could have been avoided is appropriate and suggests the relevance of a marginal cost analysis in establishing economic costs and cost responsibility. (Exh. L, p. 11.)

Power repeats the standard economic argument that efficiency is fostered when prices are set equal to marginal costs because the equality insures that "the value. . . [consumers] receive from the commodity is at least as great as what it costs the larger society to provide it to them. " (Exh. L, p. 9.) Absent a marginal cost study which identifies the expenses associated additional investment in production, gathering,

transmission and administration, Power opined that the marginal commodity or replacement cost of natural gas should serve as the floor in setting natural gas rates which avoid inter-class subsidies.

27. Pricing all natural gas at its replacement cost generates revenues exceeding those necessary to compensate the utility for its cost of service. Distribution of this economic rent involves the Commission in questions of equity, a role which Power believes was assigned this body by the statutory requirements that utility rates be just. Power suggests that the regulatory goals of eliminating monopoly profits and promoting equity can be achieved by reducing the customer charge to a nominal level and reducing all winter bills by a lump sum credit.

28. The three industrial intervenors who presented testimony, Lovell Clay Products, Pierce Packing and Midland Foods, made similar pleas to the Commission. After outlining the need for natural gas in their industrial processes and describing their conservation efforts, each urged this body to maintain the existing rate structure and reject lifeline proposals whose purpose is "to reduce the unit cost of gas to low volume users and pass on to industrial users..., who use gas in high volumes, the costs of such reduction, by increasing markedly the unit cost of natural gas to our companies. (See Exh. I, p. 12, Exh. J, p. 15, and Exh. K, p. 14.)

29. Representing the Billings Area Chamber of Commerce, David Goss spoke for many of MDU's commercial customers when he presented the Chamber's official policy statement which objected to lifeline rates on three grounds: (1) businesses will pass along any rate increases they receive as a result of lifeline; (2) and/or firms will try to cut other costs which may result in lay-offs; and (3) contrary to the assertion of lifeline's proponents, such rates will not encourage conservation. Richard Kjoss, President of the Security Bank, protested the lifeline proposal, while Bruce Alton, President of Rocky Mountain College, advocated adoption of equal rate structures for all classes of customers.

30. Residential customers who appeared at the hearings were unanimous in their objection to an increase in the base rate from \$4.00 to \$8.00 as proposed by Montana-Dakota Utilities. In their testimonies, many commercial users expressed a similar concern with rising base rates. Beyond this, the

vast majority of those stating an opinion on the issue felt that the base rate should be eliminated. Typical of their comments is that of M. W. Saunders who appeared at the satellite hearing in Glasgow and said:

To pay the gas company \$8 per month for the privilege of buying this produce is a little like being asked to pay the filling station that you once filled your car at \$8 in case you want to gas it up again. (Trans. p. 8.)

Many citizens also recognized that a base charge raises the average gas cost most for low-volume consumers: "The base rate ended up a larger portion of the total bill for small users than for larger users of natural gas. Continuing, the witness argued, "The base rate also did not do anything to encourage conservation. " (Testimony of Ginny Getz, Miles City, Trans., p. 5.)

31. Substantial public participation at the hearings in this Docket can be attributed to Action for Eastern Montana's sponsorship of lifeline testimony. Unlike reaction to the proposed increase in the base rate, lifeline received mixed reviews from natural gas consumers. Many testified in favor of a lifeline rate; for example, Algot Starr opined:

So, for the sake of conserving energy, for the sake of putting human rights ahead of that of profit for the monopolies, I think we should use the lifeline approach. (Glendive Trans., p. 22.)

After echoing the belief that lifeline forces conservation, Bill Miele appearing in Miles City testified:

. . . [lifeline] is also a rate which I believe helps those on low income and the elderly that are on a fixed income. . . . I do not deny MDU's [sic] needs a profit, needs a fair opportunity to survive. But in giving MDU an opportunity to survive [sic] I do not believe that they should deny low income and elderly people on a fixed income also an opportunity to survive [sic]. (Trans., p. 29.)

A number of witnesses cautioned that a lifeline rate may not reduce the cost of living for those with low- and fixed-incomes as its proponents argue. Reasoning that higher utility bills for businesses and government, an assumed result of lifeline implementation, would be passed on to their customers and taxpayers, Delores Guenzi with the Glendive Chamber of Commerce testified, "lifeline may look good on the surface, but we're all going to end up paying for it in the end. " (Trans., p. 34.) Others contended that the Social Security system (see Testimony of Bernard Kappes, Miles City, Trans., p. 37) or energy stamps (Testimony of Charles Mahoney, Miles City, Trans., p. 42) would reduce the burden of rising energy costs on low-income individuals more effectively than a lifeline rate.

32. In addition to the approximately 60 people who personally testified at the hearings, several hundred more signed petitions. The majority of these petitions opposed the base rate and urged adoption of a lifeline rate. Also impressive was the number of individuals who wrote to the Commission seeking elimination of the base rate. Such levels of public participation in the ratemaking process are: both unprecedented in Montana and welcomed by the Public Service Commission.

33. All three expert witnesses recognized the importance of costs in designing natural gas rates; they differed in their definitions of the relevant costs. Taking an accountant's view, Gamble argued that the costs to be considered are primarily those derived from a traditional cost-of-service study. Wilson stressed the importance of economic costs, particularly marginal; marginal cost pricing could be approximated by largely volumetric rates. Power gave the most complete justification for moving from marginal cost to replacement cost to volumetric pricing principles in the setting of rates for natural gas service.

34. Familiar to all economics students and now most public service commissioners is the proposition that the equality of price and marginal cost insures economic efficiency under conditions of perfect competition. Because utility regulation seeks to emulate the results of competition for an industry characterized by monopoly, marginal cost pricing recommends itself in the design of natural gas rates. In this Docket, no marginal cost study has been presented to the Commission which calculates the additional expenses which would be incurred by MDU in supplying an incremental unit of natural gas to its customers. Not unknown, however, is the marginal commodity or replacement cost of gas, one component and likely the major component of the full marginal cost. Gamble testified that the cost of acquiring new gas supplies is "presently... in excess of \$2.20 [per Mcf]." (Direct Testimony, p. 7.) Wilson pegged the marginal cost of gas in Montana at a level at least equal to the Canadian border price, then \$3.45 per Mcf and now \$4.47. (Exh. G, p. 95.)

35. The Commission believes that the marginal rate for natural gas service should not fall below the marginal replacement cost of that gas. To set price below this level would provide false signals to consumers about the scarcity and value of gas, causing them to use, what society must consider, too much in low priority applications. Although Wilson argues for a marginal commodity cost equal to the Canadian

border price, that figure overstates the cost to the MDU system. "Institutional structures," as Wilson denominates them, particularly federal regulations, prevent the arbitrage he described during cross-examination which would move the market toward a common selling price for natural gas. (Trans., pp. 774-6.) Power and Gamble agreed to a marginal replacement cost in the \$2.20 to 2.30 per Mcf range. At the present time, the \$2.20 to 2.30 range represents the replacement cost of natural gas to Montana-Dakota Utilities and is, consequently, the cost which should be considered by this Commission when setting rates for the utility's customers.

36. Rate design witnesses sponsored by the Company, Consumer Counsel and Action for Eastern Montana disagreed on the need for and size of the interruptible rate differential. Because Company-designed tariffs raised the commodity charge for residential and not industrial users, the differential for interruptible service was increased. The differential grew due to a need perceived by MDU to raise the return on residential sales toward the system average.

37. Implicit in Wilson's design of rates which retain the present differential is the suggestion that a larger differential is not justified on economic grounds. He states only that his rate design alternatives "may improve upon the rates filed by the Company." (Exh. G, p. 95.)

38. Power addressed the question of an interruptible rate differential more directly than either Gamble or Wilson. On page 28 of his written testimony (Exh. L), Power was asked, "Should not the industrial interruptible customers get a lower rate because they are getting a lower valued service, i.e., an interruptible service?" He responded by denying that a value-of-service or cost-of-service justification exists for an interruptible

39. Considering value-of-service arguments is inherent to the rate setting process; they can no more be ignored than the equity objectives which Power urged the Commission to accept. Tariffs covering industrial gas service state:

Deliveries of gas under this schedule shall be subject at all times to the prior demands of domestic and small commercial customers, and the Company shall have the right to interrupt deliveries to customers under this schedule without being required to give previous notice of intention so to interrupt whenever, in its judgment, it may be necessary to do so to protect the

interest of those customers whose demands are hereby given preference.
(Schedule 85-M-9B of MDU's natural gas tariffs.)

Clearly, the delivery of gas under this schedule has a lower priority than that to other customers. Since industrial customers are not guaranteed a continuous supply of natural gas and may have their service interrupted, industrial service is less valuable than that received by residential and small commercial users. Accordingly, the Commission believes the rate for industrial natural gas should reflect MDU's right to interrupt that service at the utility's discretion; proper recognition involves a lower energy charge for industrial service. Absent evidence that it should be changed, the rate differential shall be left at its present level of \$0.026953 per Mcf.

The Commission must also note that had rates been based on full marginal costs as economists Wilson and Power argued was efficient, the cost, and hence the rate, for interruptible service would have been found to be less than that for firm sales due to the assignment of all storage costs to firm sales. Although full marginal costs are unknown, the preceding observation adds to the evidence supporting an interruptible rate differential .

40. As part of its application, Montana-Dakota Utilities proposed an increase in the customer charge or base rate from \$4 a month to \$8. Gamble argued that the higher charge would more nearly approximate the customer costs. (Direct Testimony, p. 4.) Wilson and Power sought reductions in the base rate from its current level. Consistent with his recommendation that rates be largely volumetric, Wilson sponsored Alternative A, a rate design which eliminated all customer charges. Power addressed the base rate issue by saying "...the only behavior it can encourage is [customers'] leaving the system," a reaction which MDU could not, in general, favor and which the charge is too small to encourage strongly; "[t]hus there is no conservation or efficiency argument which can be made for charges of this sort." Power continued, "Dropping the customer charge entirely instead of raising it would cause hardly any changes in behavior by gas customers. " (Exh. L, p. 26.)

41. The Commission is persuaded by the arguments of expert witnesses, Wilson and Power, and by extensive public testimony that the base rate for natural gas service should be eliminated. By doing

away with the customer charge, the commodity charge can be set higher, more nearly equal to the replacement cost of gas; a change in this direction will serve to promote conservation. As Power recognized, a charge at the level proposed by MDU would not induce people to leave the system or use less gas; rather, it "serves no function and is simply punitive." (Exh. L, p. 26.) James C. Bonbright, in his classic text on Principles of Public Utility Rates, cites public acceptability as one of the relevant criteria in judging the appropriateness of a rate structure. The large number of public witnesses who appeared at the hearings and testified against the base rate strongly indicates that that charge is neither understood nor accepted by many of MDU's customers who must pay it. Together, the conservation argument and considerations of public acceptance force this Commission to adopt a natural gas rate structure for Montana-Dakota Utilities which does not contain customer charges.

42. Because the revenue requirement is based on embedded or historic costs, pricing all natural gas at its current replacement cost would generate revenues exceeding those found necessary to compensate the utility for its costs of service. Dropping customer charges serves to reduce the excess but does not eliminate it. Power suggested that the excess revenue problem be dealt with by granting all consumers a lump sum credit on their utility bills during the four or six winter months. According to his testimony, this alternative recommended itself on equity, efficiency and conservation grounds:

- (a) EQUITY: To the extent that the usage of natural gas is positively correlated with income, those with low incomes will be charged a lower average rate, consistent with their small ability to pay, than those better able to afford gas due to their higher incomes.
- (b) EFFICIENCY: The marginal rate for natural gas can be made to more nearly approximate its marginal replacement cost, forcing consumers to act in ways which reflect the true scarcity of that resource .
- (c) CONSERVATION: The higher rate for marginal consumption will encourage consumers to use less natural gas. (See Exh. L, p. 19 95.)

43. The Commission is persuaded by Power's equity, efficiency and conservation arguments that the average rate for natural gas should rise with usage levels and that the marginal rates should reflect the

marginal commodity cost. However, an inverted block rate structure rather than a lump sum discount is found to be the best means of accomplishing these ends. This conclusion is based on the same reasoning adopted in Order No. 4521 b, Docket No. 6618 (Montana Power's application for increased natural gas rates). In that Order, the Commission found, inter alia:

. . . a lump sum discount might mislead consumers as to the actual prices being paid for gas and therefore could obscure the signal associated with price. Also a lump sum payment would produce bills of zero for consumers who actually used small amounts of gas. The Commission regards service without cost as inappropriate. (Finding of Fact No. 46.)

44. By summing the quantities consumed, on average, in the life support activities of space heating, water heating and cooking, Power determined that 14 to 15 Mcf's of natural gas a month during the winter should be considered a necessity. The Commission finds that a block of 15 Mcf's during the months December through March should be priced at a 25 percent discount in all schedules covering firm sales. Such a discount approximates the effect of the lump sum reduction which Power advocated and removes the possibility of zero bills inherent in his proposal.

45. Consumption above 15 Mcf's and during the remainder of the year by firm customers will be priced volumetrically at the level necessitated by the revenue requirement previously determined, giving consideration to the interruptible rate differential sanctioned in Finding of Fact No. 37. The revenue shortfall associated with the seasonal discount on firm sales shall not be spread to interruptible customers. The two-block inverted rate structure so determined provides proper signals as to the marginal replacement cost of natural gas. Although a three or more block structure would, with the revenue requirement determined in this Order, allow a terminal block rate equal to the marginal commodity cost, adoption of such a structure at this time would be too abrupt a change from present rate schedules.

CONCLUSIONS OF LAW

1. The rate bases determined for the electric utility, and for the gas utility reflect original cost depreciated values. These values comply with the requirements of 69-3-109, MCA, that the value placed upon a utility's property for ratemaking purposes "...may not exceed the original cost of the property .

2. An average rate base is an appropriate means of measuring the value of Applicant's properties at risk during the test period. In addition, the use of average rate base values better match test year revenues and expenses to the properties which produced them than do end of test year values. This Commission is of the opinion that achieving this matching remains a paramount goal in informed rate making. Accordingly, adoption of the average rate bases with corresponding revenue and expense levels is appropriate.

3. Section 69-3-201, MCA, declares:

Utilities to provide adequate service at reasonable charges. Every public utility is required to furnish reasonably adequate service and facilities. The charge made by any public utility for any heat, light, power, water, telegraph, or telephone service, produced, transmitted, delivered, or furnished, or for any service to be rendered as or in connection with any public utility shall be reasonable and just, and every unjust and unreasonable charge is prohibited and declared unlawful.

Section 69-3-103(1), MCA, grants this power:

General powers and rulemaking authority of commission. (1) In addition to the modes of procedure hereinafter prescribed in particular cases and classes of cases, said commission shall have power to prescribe rules of procedure and to do all things necessary and convenient in the exercise of the powers by this chapter upon the commission; . . .

It is with these two statutes in mind that the Commission considers MDU's purchases from its wholly-owned subsidiary, Knife River Coal Company. Recognizing that it can go no further than to consider MDU's cost of fuel, the Commission also believes that sole reliance on a transfer price comparison has clear limitations, thus it determines from an examination paying excessive prices for coal and of Knife River's profits that MDU is makes appropriate adjustments.

4. The rate of return allowed in this order meets the constitutional return must be "commensurate with requirement that a public utility's returns on investments in other enterprises having corresponding risks and sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital." Federal Power Commission v. Hope Natural Gas Company, 320 U.S. 591, 603 (1944).

5. The rate structures authorized by the Commission, based upon analysis of the entire record, are just, reasonable, and not unjustly discriminatory.

ORDER

The Montana Public Service Commission Orders that:

1. Rate schedules shall be filed in accordance with the Commission's findings and determinations in the " Finding of Fact" sections of this order. The schedules shall become effective upon Commission approval.

2. Currently effective electric rate schedules shall be increased on a uniform percentage basis. Kilowatt hour sales shall be used in computing the percentages.

3. All motions and objections not ruled upon are denied.

Done in Open Session at a meeting of the Montana Public Service Commission this 21st day of April, 1980 by a vote of 5-0.

BY ORDER OF THE MONTANA PUBLIC SERVICE COMMISSION

GORDON E. BOLLINGER, Chairman

CLYDE JARVIS, Commissioner

THOMAS J. SCHNEIDER, Commissioner

JAMES R. SHEA, Commissioner

GEORGE TURMAN, Commissioner

ATTEST:

Madeline L. Cottrill
Secretary

(SEAL)

NOTE: You may be entitled to judicial review of the final decision in this matter. If no Motion for Reconsideration is filed, judicial review may be obtained by filing a petition for review within thirty (30) days from the service of this order. If a Motion for Reconsideration is filed, a Commission order is final for purpose of appeal upon the entry of a ruling on that motion, or upon the passage of ten (10) days following the filing of that motion. cf. the Montana Administrative Procedure Act, esp. Sec. 2-4-702, MCA; and Commission Rules of Practice and Procedure, esp. 38-2.2(64)-P2750, ARM.