

Service Date: December 20, 1978

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

DEPARTMENT OF PUBLIC SERVICE REGULATION
MONTANA PUBLIC SERVICE COMMISSION

In the Matter of the Application of)DOCKET NO.6567
MONTANA-DAKOTA UTILITIES, INC., for)
authority to establish increased)ORDER NO. 4467
rates for electric and gas service.)

APPEARANCES

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For the Montana Public Service Commission Staff:

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Dan Elliott, C. P. A.
Robert Smith, Attorney at Law

Before:

THOMAS J. SCHNEIDER, Commissioner & Presiding Officer
GORDON E. BOLLINGER, Chairman
P. J. GILFEATHER, Commissioner
JAMES R. SHEA, Commissioner
GEORGE TURMAN, Commissioner

FINDINGS OF FACT

Part A
General

1. Montana-Dakota Utilities, Inc. (MDU or applicant) is a public utility furnishing electric and gas service to consumers in the State of Montana.

2. This Commission has jurisdiction over the rates and the conditions under which utility service is rendered in Montana.

3. Applicant's petition, filed March 20, 1978, requests this Commission's approval of rates for electric utility service which are designed to produce an increase in annual gross operating revenues of \$2,312,816 and for gas utility

service which are designed to produce an increase in annual gross operating revenues of \$10,159,773. Both increases are based on a year end 1977 test year with projections to September 30, 1978.

4. The Montana Consumer Counsel (MCC) has participated in this docket on behalf of utility consumers since the inception of these proceedings.

5. Protestants Great Western Sugar, Holly Sugar Corp., Lovell Clay Products Co., Midland Foods, Inc., and Pierce Packing Co. were admitted as intervenors at various times since the inception of these proceedings.

6. On August 16 and 17, 1978 public workshops to discuss this proceeding and rate making in general were held in Miles City and Billings respectively.

7. On August 18, 1978 the Commission issued notice of public hearings in Billings and Miles City.

8. No objection has been made to the adequacy or form of the August 18, 1978 notice, or to the manner and times of its issuance and publication.

9. Copies of testimony filed in this proceeding were also placed in public libraries in Billings, Glasgow, Wolf Point, Baker and Miles City.

10. On September 12, 13 and 14, 1978, pursuant to the Commission's notice, hearings to receive evidence and allow cross examination were conducted in Billings, Montana.

11. On September 13 and 19, 1978 at 7:00 p.m. pursuant to the Commission's notice, public hearings were held in Billings and Miles City respectively at which public witnesses appeared.

12. Opening briefs were received on or about October 25, 1978 and reply briefs and proposed findings were received on or about November 13, 1978.

13. Applicant proposes 1977, adjusted for known September 30, 1978, be used as the test period in this docket.

14. The year 1977 is determined by the commission to be a reasonable period within which to measure applicant's utility revenues, expenses and returns for the purposes of determining a fair and reasonable level of rates for utility service. The issues of year end vs. average rate known and measurable changes will be addressed in other finding of fact sections.

Part B

Capital Structure and Associated Costs

Electric Utility

CAPITAL STRUCTURE

15. Applicant proposes the following associated costs:

Description	Capital Structure	Cost	Weighted Cost
Capital Associated With In Service Rate Base:			
Long Term Debt	\$116,820,000 (50.63%)	7.483%	3.79%
Preferred Stock	26,000,000 (11.27%)	6.574%	.74%
Common Stock	87,890,000 <u>38.10%</u>	14.5 %	<u>5.53%</u>
	\$230,710,000 (100%)		10.06%
Capital Associated with Construction Work In Progress (CWIP):			
Long Term Debt	50%*	9.25%	4.625%
Preferred Stock	10%*	9.00%	.900%
Common Stock	40%*	14.5%	5.80%
	100%		11.315%

<u>Description</u>	<u>Rate Base</u>	<u>Rate of Return</u>	<u>Dollars of Return</u>	<u>Rate of Return</u>	<u>Overall Rate of Return</u>
In Service	\$113,132,000	10.06%	\$11,381,079 (84.88%)	10.06%	8.54%
CWIP	17,905,900	11.325%	2,027,843 (15.12%)	11.325%	1.71%
Totals			\$13,408,922		10.25%

* Constitutes what MDU feels to be an optimal capital structure.

MDU also presents an alternative capital structure which is split between gas and electric for purposes of comparison.

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

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted</u>
<u>Cost</u>			
Long Term Debt	\$60,555,100 (57.97%)	7.40%	4.29%
Preferred Stock	13,489,789 (12.91%)	6.71%	.87
Common Stock	30,421,580 (29.12%)	11.75%	3.42
	\$104,466,460 100%		8.58%

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.

17. The two proposals are reconciled below:

	Long Term Debt	Preferred Stock	Common Stock
Per MCC	60,555,100	13,489,780	30,421,580
	59,749,060(1)	13,310,220(1)	45,704,520(1)
	(3,484,000)(2)	(800,000)(3)	(836,349)(3)
	(160)(5)		<u>12,600,000</u> (4)
Per MDU	116,820,000	26,000,000	87,889,751

- (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 1978 and deducted in MDU's presentation.
- (3) MDU's deduction for investment in subsidiaries was larger than MCC's by this amount.
- (4) MDU's inclusion of the proceeds of the sale of common stock in March, 1978.
- (5) Rounding.

18. The Commission accepts the following capital structure

	Long Term Debt	Preferred Common Stock	Common Stock
Per MCC	\$60,555,100	\$13,489,780	\$30,421,580
Retirements	(1,753,700)	(402,680)	-
Issuances	-	-	6,342,210
Investment in Subsidiaries	-	-	<u>(420,976)</u>
Total	<u>\$58,801,400</u>	<u>\$13,087,100</u>	<u>\$36,342,814</u>
Percentages	<u>54.33%</u>	<u>12.09%</u>	<u>33.58%</u>

The above capital structure recognizes additions to and retirements from the capital structure occurring within a reasonable period after the test year. This is consistent with the recognition of known and measurable changes in the determination of MDU's cost of service.

Investments in subsidiaries is increased from the amount advocated by MCC due to investment in subsidiaries other than the

Knife River properties.

A construction work in progress (CWIP) capital structure is not included due to the statutory constraints affecting inclusion of CWIP in the rate base.

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

RETURN ON DEBT

19. Total long term debt costs advocated by the applicant and MCC are identical before the retirement of presented in the applicant's case.

In splitting the capital structure, 50.335% of the retire allocated REA notes and pollution control bonds to electric operations also.

The Commission accepts the above retirement and allocation of REA and pollution control debt and finds the following cost of long term debt appropriate:

	Amount	Cost	Weighted Cost
REA & Pollution Control Notes	\$16,358,000 (27.82%)	6.99%	1.94%
Other Debt Allocated To Electric Operators	<u>\$42,443,400 (72.18%)</u>	7.57%	<u>5.46%</u>
	\$58,801,400 (100%)		<u>7.40%</u>

RETURN ON PREFERRED STOCK

20. Total preferred stock costs advocated by the Applicant and MCC are identical before the retirement of \$800,000 as presented in the applicant's case.

In splitting the capital structure, 50.335% of the retirement is allocated to electric operations.

The Commission accepts the above retirement and allocation and finds the cost of preferred stock as

proposed by the applicant, i.e., 6.574% appropriate.

RETURN ON EQUITY

21. 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 judgements, some of which the Commission finds to be deficient on the part of both parties. For example, applicant's case states on pg. 8, lines 4 and 5 of Kuric's direct testimony that the rate of return on equity should be set to maintain a dividend payout ratio on utility operations of 55% - 60%. MCC's case, however, uses a 70% payout ratio on pg. 109 of Wilson's testimony. In neither case is the payout ratio used adequately defended. Since both parties present DCF analyzes, which are based on dividend yield and growth, it remains a mystery why the payout ratio question is not sufficiently addressed.

22. Applicant's case states on pg. 7, and 8 of Monteau's sur rebuttal "Dr. Wilson has made no attempt to establish the correspondence of risk between his broad groups of companies and Montana-Dakota Utilities. When MDU asked for such a study in its data requests, he responded with the reasons he used a large number of companies - not any study demonstrating comparability to MDU. Dr. Wilson has

used these same groups of companies in each and every study he has performed in many different cases for many different companies." The Commission is inclined to agree.

However, Monteau's comparative earnings study and DCF analysis includes 16 utilities; 11 of which are regulated by the states of Iowa and Wisconsin. The small sample size and the high percent age of Iowa and Wisconsin regulated utilities would replace the judgement of the Montana Commission with that of the Commissions of the abovementioned states if accepted. A further comparative earnings study is presented by Monteau which analyzes industrials with the highest Standard and Poor's common stock rating since 1960. These 22 companies are said to be investment alternatives to utility stocks and presumably MDU's stock. However, no study is presented to establish the correspondence or the difference in risk between these companies and MDU. Also, Monteau presents a market appraisal study in his rebuttal. The electric comparables constitute 113 electric and combination utilities taken from C.A. Turner's "Public Utility Common Stocks". The relationship between market-to-book ratios and common equity returns for these companies is scrutinized, and the results presumably apply to MDU

23. The Commission accepts the comparable companies recommended by the MCC. Regardless of the redundancy of use, these comparables present the widest, most unbiased statistical basis from which a decision may be reached; and these comparables on the cost of common equity capital in the industry in general. Along the same lines

the have a bearing electric utility 113 electric and combination utilities presented in MDU's market appraisal study have the same bearing and are accepted.

24. The Commission finds the following with regard to the DCF method forwarded by MCC:

A. The DCF method is one of several acceptable methods that can be used to value common equity. It has been used and endorsed by the Federal Power Commission (FPC, now the Federal Energy Regulatory Commission) amongst others, as a method which satisfies the standards espoused in Hope and Bluefield. (J.W. Wilson, Direct. pg. 51 lines 23 - 25)

B. The use of ten growth periods in MCC's DCF analysis is acceptable. In order to estimate the present worth of future growth, dividend 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 1 year through 10 years in length used to establish dividend growth are reasonable because theoretically, certain investors may only look to the results of one year in making their investment decisions. (J.W. Wilson, Direct pg. 66 lines 16 - 21) Statistically, the shorter periods are less significant and must be weighted thusly. In MCC's analysis, the ten year period is weighed 30 times as heavily as earnings growth over the one year period because the derived correlation coefficients used as weights are in proportion to their level of statistical significance. This is appropriate since, in this instance, the inclusion of the high growth period of 1974-1976 would unduly enrich the results of a simple averaging method.

The proposed premium of 3% above book for expenses associated with stock issuance is accepted. Market

pressure is said by the MCC to account for very little, if any, of this premium. The Commission agrees with this approach for two reasons:

(1) During MDU's March, 1978 issuance, their stock outperformed the market as a whole indicating some negative market pressure. (J.W. Wilson, Direct pg. 84 lines 15 - 23)

(2) A 1972 article in the Journal of Business and presented by MCC supports this conclusion. Wilson, Direct pg. 81, 82) MDU's witness Monteau, on the other hand, concludes that these costs (financing and pressure) are 10%--based on studies performed and observed. However, none of these studies are presented in evidence. MDU's witness Paige presents a market pressure study, but market pressure is not assessed in terms of how a company's stock performs in relation to the performance of the market as a whole and is therefore rejected. (R.B. Paige, Rebuttal pg. 6 lines 8 - 18)

25. The result of MCC's DCF analysis, namely that an 11.75% rate of return on equity is compensatory, is accepted.

26. The result of the applicant's DCF analysis is based on the use of comparable companies the Commission has rejected, and is therefore rejected.

27. The Commission finds the following with respect to the comparable earnings analysis presented by MCC:

A. The comparable earnings approach is a relatively simple concept. It examines and compares the rates of return earned by MDU with returns earned in comparable investment situations.

B. The rationale behind this approach is that, if the utility is to compete on an opportunity cost basis in the capital markets, it must be able to provide a

reasonable return on existing investment. One measure of the reasonableness and competitiveness of the return is that it must approximate what the investor could have earned in comparable investment situations. (J.W. Wilson, Direct pg. 38 lines 9 - 11)

C. The Commission accepts the results of MCC's comparative earnings analysis i.e.. that a 12% rate of return on MDU's common equity is fair. acceptance is the acceptance above of the comparable companies which the MCC uses. The earnings of these companies present what the investor could have earned in comparable investment situations.

28. The result of the applicant's comparable earnings analysis is based on comparable companies the Commission has rejected, and is therefore rejected.

29. The Commission finds the following with respect to the Market Appraisal Study presented by the applicant:

A. The applicant has proven correlation exists between Market-to-Book ratios and returns on common equity of the 113 comparable electric and combination utilities presented. (W.D. Monteau, Rebuttal pg. 13 lines 12 - 17)

B. Both applicant and MCC agree that, on the basis of a long run equilibrium, a market-to-book ratio 1.00 (excluding issuance expenses and pressures) is desirable. (W.D. Monteau, Rebuttal pg. 10 lines 3 - 5, and J.W. Wilson, Direct pg. 60 lines 21-25, pg. 61 lines 1 - 4)

C. The Commission above accepted 3% in MCC's DCF analysis as the premium associated with issuance expenses and pressure; thereby producing a desirable market-to-book ratio of 1.03.

D. Using the applicant's regression equations of $y =$

.3510 + 5.5125 x, where y (the dependent variable) is the market-to-book ratio and x (the independent variable) is the return on common equity, and a market-to-book ratio of 1.03, a return on equity of 12.32% results.

E. Applicant states that at this level, only a 50-50 chance exists of selling stock for a price at least equal to book value. Since the stock market fluctuates up and down due to economic conditions, political events, etc., it is impossible to guarantee that the market-to-book rates at any given time will be 1.03. However, if the Commission sets the rate of return on equity at a point where a greater than 50% chance existed for the stock to sell above a 1.03 market-to-book, then the weighed average market-to-book ratio would be above 1.03. Also as MCC's witness Wilson states on pg. 103 of his direct testimony, "Regulatory. commissions do not have the responsibility (and under some conditions not even the ability) to peg the market price of common stock at some preordained level. If this were done (as Mr. Meyer seems to suggest would be appropriate in this case) then, of course, the risks of common equity would be eliminated, and no equity premium over risk free debt costs would be justified."

F. The Commission finds that, although the 113 comparable companies used in this analysis include combination utilities, i.e. utilities with some gas operations, and that the increased risk of gas operations and their higher equity returns may provide a distorted comparison in arriving at a rate of return on electric equity, this fact has not been challenged in this record. In fact, the

electric comparables used by MCC include combination utilities. Therefore, the Commission finds the 12.32% return on equity derived from the Market Appraisal study reasonable, and accepted.

30. The general overview of the economy and stock market, including coverage ratios, capital structure, cash flow, capital attraction and earnings quality as presented by MDU witness Meyer has also been considered by the Commission. It is felt that the return approved below will provide adequate financial results with regard to those enumerated areas.

31. The Commission has found acceptable three recommendations forwarded by the parties to determine the applicant's rate of return on equity. The Commission finds each method valuable in certain aspects and feels that an average of the three results presents the most representative, quantifiable, unbiased and compensatory rate of return on the applicant's common equity:

MCC's DCF Method	11.75%
MCC's Comparative Earnings Analysis	12.00%
MDU's Market Appraisal Study	<u>12.32%</u>
	36.07%
	3
	12.02%

After rounding, the Commission determines that a 12.00% rate of return on the applicant's electric utility common equity is appropriate.

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

<u>Type</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Long Term Debt	54.33%	7.40%	4.02%
Preferred Stock	12.09%	6.574%	79%
Common Stock	<u>33.58%</u>	<u>12.00%</u>	<u>4.03%</u>
Total	100%		<u>8.84%</u>

Part C

Jurisdictional Allocation Factors

Electric Utility

33. MDU's jurisdictional allocation factors consist of allocating demand related costs on the basis of an area's contribution to the 12 monthly coincident peaks for the system and allocating energy related costs on the basis of kilowatt-hour sales.

MCC tested several other methods of allocating demand costs to Montana which use noncoincident demands, but concurs in using the applicant's method as the accuracy of noncoincident demand data is questionable due to incomplete class load studies. (G.F. Hess, Direct pg. 27 lines 16 - 25, pg. 26 lines 1 - 9)

34. The Commission accepts the applicant's jurisdictional allocations. MDU should be forewarned. however that the Commission wants completed class load studies in future rate proceedings.

Part D

Rate Base

Electric Utility

35. The following rate base amounts are forwarded:

Applicant

Consumer Counsel

Plant in Service	\$49,182,839	\$48,696,000
Accumulated Depreciation	(15,691,563)	(15,137,000)
CWIP In Service at Year End	177,461	177,000
Materials and Supplies	528,413	536,000
Fuel Stocks	275,040	271,000
Customer Advances for Construction	(4,459)	(5,000)
Accumulated Deferred Income Taxes	(2,408,472)	(2,258,000)
Accumulated Investment Tax Credit	(1,712,143)	(1,660,000)
Total Rate Base - Per Books	<u>\$30,347,116</u>	<u>\$30,620,000</u>

Rate Case Adjustments:

CWIP Overheads	28,394	28,000
Materials & Supplies	17,790	30,000
Fuel Stocks	34,769	2,000
CWIP Provided for Existing Customers)	<u>5,466,743</u>	<u>na</u>
Total Adjusted Rate Base	\$35,894,812	\$30,680,000

36. The difference between the two rate bases per books arises from the applicant's usage of a year end 1977 rate base and the MCC's usage of a 13 month average, i.e., December, 1976 -December, 1977.

This Commission has used and shall in this proceeding, use an average rate base for the reason stated in MCC witness Hess direct testimony on pg. 8:

To achieve a proper matching of operating income for a 12 month period with the investment that produced that income, the rate base to which the income is related must be the average rate base during the 12 months the income was earned rather than the rate base At the end of the year.

37. The major difference between the applicants and MCC's

adjustments is the inclusion of CWIP by the applicant and the exclusion of CWIP by MCC. MCC did not include CWIP in the rate base because it is not used and useful. The Commission concurs with this treatment because CWIP is not available for use by the existing ratepayer.

38. The Commission accepts \$30,680,000 as the proper valuation of electric utility rate base amount in this proceeding

Part E
Revenue and Expense
Electric Utility

39. The following cost of service recommendations are made in this proceeding:

	<u>Applicant</u>	<u>MCC</u>
Operating Income at Present Rates (per Books)	\$2,103,552.	\$2,104,000
Pro Forma Adjustments	430,576.	<u>939,000</u>
Net Adjusted Operating Income at Present Rates	<u>\$2,534,128.</u>	<u>\$3,043,000</u>

40. Differences in pro forma adjustments are as follows: A. Applicant adjusts revenues and expenses to year end levels to match the year end rate base they used. MCC does not because an average rate base is used.

B. MDU makes an adjustment for inflation because of the increase they perceive will occur due to a rising general price level. MCC does not because this does not constitute a known and measurable change.

C. Applicant adjusts fuel costs to reflect price levels

forecasted to be in effect September 30, 1978. MCC adjusts fuel costs to reflect prices in effect in July, 1978.

D. MCC prices Big Stone participation sales at the most recent MAPP rate. Applicant uses a price lower than this.

E. Applicant estimated that first class postage would rise to 164. MCC used the actual increase to 154 in making the postage increase adjustment.

F. Applicant amortized interest arising from a federal tax return audit over 2 years. MCC amortized it over 5 years with the unamortized balance to be included in the rate base.

G. Applicant and MCC differ on the amount of interest to be deducted for income tax purposes. However, the method used to compute that interest is similar.

H. MCC amortizes pre 1974 profit on debt reacquired at a profit. Applicant does not.

I. MCC adjusts income for excess profits realized by MDU's subsidiary, Knife River. Applicant does not.

41. The Commission finds the following:

A. The annualization of revenues and expenses is not accepted. The Commission has accepted an average rate base and to accept annualization would not satisfy the matching principle.

B. The inflation adjustment is not accepted. The 1977 general price level increase may or may not be indicative of conditions that will exist. The fact is that this does not constitute a known and measurable change. The Commission prefers to limit the-pro forma adjustments to known and measurable changes as this eliminates certain subjectivities otherwise involved.

C. MCC fuel costs are accepted because they constitute a known and measurable change.

D. MCC's sales for resale amounts are accepted for reasons stated in Hess' direct testimony, i.e. if these non-jurisdictional sales for resale are made below cost Montana consumers will ultimately share in paying the difference. MCC uses the most recent MAPP rate accepted by the F. E. R. C . in valuing these sales.

E. MCC's postage adjustment is accepted as first class postage to 154 constitutes a known and measurable change.

F. The Commission determines that interest arising from the federal income tax audit should be amortized over 3 years because this is the statute of limitations governing U.S. Corporation Income Tax Returns. The audit in question covered three years, and theoretically, in lieu of extensions, the Internal Revenue Service would audit MDU once every three years. Conoco has suggested that these costs be deducted below the line. The Commission does not agree with this contention because this interest is not recovered in the rate of return calculation.

G. The Commission accepts the method used by both parties in computing the interest expense deduction used in computing income taxes. Because the weighted cost of debt and the rate base accepted by the Commission are identical to those suggested by the MCC, the interest expense in question will be that used by MCC.

H. The amortization of pre 1974 profit on reacquired debt is accepted. When a company acquires it's own debt at a profit, this lowers the overall cost of that debt and should be taken into account in computing cost of debt or

cost of service.

I. The Commission finds the presentations by MDU and MCC to be deficient in certain aspects with regard to MDU's coal purchase costs.

MCC witness Wilson's testimony advocates regulation of all Knife River's coal sales, including sales to utilities other than MDU and nonutilities. The Commission feels that any attempt by it to regulate Knife River's profitability in this manner is unlawful. Knife River's assets have never been dedicated to the public use and it is not in the business of providing utility services in any form.

MDU, on the other hand, suggests that only the transfer price of coal be reviewed. Furthermore, in this proceeding they suggest that no coal purchase price adjustments be made because of the competitive nature of the transfer price. The Commission does not agree with this approach for reasons stated below.

MDU is before this Commission with an application for a rate increase. The Commission is bound by law to investigate all phases of the applicants operation--including the price it must pay for fuel to generate electricity.

In this regard when the price MDU must pay for coal is reviewed, the parent-subsidary relationship between MDU and Knife River must be examined to determine, among other things, whether or not arms length bargaining exists.

MCC, in schedule JW-1, page 2 of 2, shows that Knife River's profitability was 33.43% on net fixed assets. Since MDU stockholders own Knife River, they are, in effect,

selling coal to the ratepayers of MDU at a price which earns them this rate of return. (J. W. Wilson Direct, pg. 12 lines 9-16 and pg. 14 lines 10-22). MDU stockholders are being allowed 12.124%¹ rate of return on assets dedicated to the public convenience in this proceeding. The difference in rates of return MDU's stockholders are earning from the ratepayers of MDU in these two instances is extreme.

1	Cost of Equity	% of Total Equity	Total
Electric:	12.00% (Finding 31)	50.335%	6.04%
Gas:	12.25% (Finding 60)	<u>49.665%</u>	<u>6.084%</u>
		100%	<u>12.124%</u>

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 these assets by the of return being earned on 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.

The method the Commission uses to determine the amount of the excessive coal charges levied by Knife River is as follows:

A. Knife River's capitalization is determined. MCC's witness Wilson has determined this amount to be \$15,899,519.

B. MDU's rate of return on equity is applied to the capitalization to produce a revenue amount: $12.124\% \times 15,899,519 = \$1,927,658$.

C. This amount is subtracted from the return actually earned by Knife River: $\$4,475,885 - \$1,927,658 = \$2,548,227$.

D. MDU's direct and indirect purchases of coal from Knife determine this River are determined. MCC's witnesses amount to be 33.91% of Knife River's total sales.

E. Direct and indirect sales from Knife River to MDU are then determined: $\$2,548,227 \times 32.8272\% = \$836,512$.

F. Montana's portion of the excessive coal costs is then determined by multiplying by the proportion of Montana's kwh sales to total interconnected system kwh sales: $\$836,512 \times 33.91\% = \$283,661$.

Several points raised by MDU remain to be answered:

1. MU 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 with 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) (A.S. Kane, Rebuttal pg. 28 line 14 through 31 line 25). Finally, the bargaining between MDU and Knife River is not at arms length. Anytime an unitary entity bargains with itself, the results tend to be different than the results of bargaining between unrelated entities. (J.W. Wilson, Rebuttal pg. 20 lines 5 - 25)

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. Firstly, 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.

The method of reporting is consistent with the financial reporting of all corporations, including natural resource companies.

42. The Commission accepts the following cost of service as appropriate in this proceeding:

Operating Income at Present Rates	\$2,104,000
MCC's Pro Forma Adjustments	939,000
Knife River Adjustment (Finding of Fact 41 I)	(287,000)
Interest Expense Adjustment (Finding of Fact 41 F)	(1,000)
Approved Test Year Net Income	<u>\$2,755,000</u>
Being Currently Earned	

Part F

Revenue Calculation

Electric Utility

43. The Commission determines that a decrease of \$88,447 in annual revenue is required in MDU's Montana electric operations as follows:

Rate Base, as approved	\$30,680,000
Overall Rate of Return, as approved	8.84%
Approved Net Income	2,712,112.
Add: Expenses, as approved	<u>+10,143,441</u>
Gross Operating Revenues, as approved	12,855,553.
Less: Test Year Gross Operating Revenues	
Currently Being Earned	<u>-12,944,000</u>
Decrease in Annual Gross Operating Revenues	
Granted Applicant	<u>(\$ 88,447)</u>

PART G

Cost of Service and Rate Design

Rate Structure

Electric Utility

44. MDU and MCC vary markedly with regard to the rate structures they have proposed to the Commission in this docket. The end result of MDU's methodology is historical-cost-based non-time-varying rates, while the end result of MCC's methodology is marginal-cost-based, time-varying rates. MDU has also submitted an optional semi-marginal-cost-based time-of-day rate schedule which is based on findings of fact in order #4369, docket 6441. The parties methodologies will be discussed as follows: First, historical costs vs. marginal costs and non-time varying rates vs. time varying rates will be discussed in general; second, MDU's proposals will be discussed specifically followed by a discussion of MCC witness Wilson's proposal.

45. Rate determination using historical costs involves finding the rate of return of each customer class, the total of which equals the rate of return being earned by the utility overall. These class rates of return are utilized as guides in setting rates and are computed by allocating historical costs amongst the classes. Many allocation methods exist, each having its own merits. Rate determination using marginal costs involves finding the cost of the next unit of electricity at the present or projecting its future cost, and pricing all the units at this price.

The philosophies underlying the two methods differ. Prices based on the historical method are derived for each customer class by the allocation of accounting costs among the classes. Prices based on the marginal

method are related to economic costs incurred or anticipated in production at the margin, i.e. the next increment of output in a production series.

46. Time varying rates attempt to charge consumers a rate commensurate with the costs of serving those consumers at that particular time. The cost of electricity varies during the day, week and year due to differing loads placed on the plant. Time varying rates account for this through differing rates which track these costs; non-time varying rates charge the same rate regardless of time of use. Time varying rates may be computed using historical or marginal costs, as may non-time varying rates.

47. Significantly, the method presented by MDU witness Mr. Chick classifies "demand-related" power supplies costs on the bases of a natural weighing of coincidental peak demand plus average demand.

Allocation of these classified demand related costs to the various customer classes is based upon the coincidental peak participation and average consumption of the classes. The net effect of this classification and allocation technique is to assign about 60% of the power supply costs to demand and 40% to energy.

MDU chose to ignore the thrust of the Finding 89 of Order 4369 in Docket 6441 which called for a presentation of a range of cost classification methodologies.

48. MCC witness Mr. Hess provided an "MDU run" of the average and excess costing methodology. Although

witness Hess expressed reservations about the appropriateness of the Chick natural weighting technique, he did not advocate an alternative method. Mr. Hess testified that in the absence of a completed load study the coincidental peak oriented approach was based on data which could be more closely estimated than techniques such as the average and excess method relying upon noncoincidental peak information.

49. MCC witness Dr. Wilson performed a marginal cost study. Of particular importance, the methodology employed was, with regard to power supply or generation, a "peaker" method. Transmission costs were established as carrying cost plus maintenance and reserve requirements, which were then unitized on the basis of noncoincidental demands. Distribution and customer cost components were taken from MDU's embedded average cost study, which he testified were acceptable proxies for their marginal costs. Distribution costs were allocated to primary and secondary service voltage components in proportion to the respective distribution plant Primary service costs are unitized on the basis of noncoincidental demands. Distribution and customer costs components were taken from MDU=s embedded average cost study, which he testified were acceptable proxies for their marginal costs. Distribution costs were allocated to primary and secondary service voltage components in proportion to the respective distribution plant. Primary service costs are unitized on the basis of

noncoincidental peak demands, while secondary level costs are unitized on the basis of total Montana Kw demand at generation less primary demand. Transmission and distribution line losses are applied to the appropriate services.

Dr. Wilson proposed marginal cost based time of use rate schedules for service at primary and secondary voltage levels which include a demand component, both on and off peak energy components, and a customer service charge.

50. The existing basic and optional rate schedules are based upon the "semi-marginal" cost method advocated by staff witnesses Miller and Galligan in Docket 6441. The semi-marginal method melded the marginal cost of the production power supply plant with the customer class allocation factors used by MDU to establish cost responsibility by class. That marginal cost based methodology, as adopted by the Commission in Docket 6441, is similar in most respects to the presentation of Dr. Wilson in this case. Several distinguishing characteristics are summarized below:

<u>Factor</u>	<u>Miller (6441)</u>	<u>Wilson</u>
Demand Component	Coincidental Peak	Noncoincidental Peak
Rating Period (On Peak)	11 am - 8 pm	10 am - 11 pm
Ratio of <u>On Peak Rate</u> Off Peak Rate	= 4:1*	=3:1**
Class cost of service	semi-marginal method allocated to classes via MDU factors	No Class distinctions

* The Commission adopted a ratio of 5.5:1 to coincide with

South Dakota schedules.

** Ratio is 5:1 when adjusted to a comparative basis with Miller by inclusion of demand charges.

51. The Commission finds, subject to the reservations and that the marginal cost rate design techniques modifications of subsequent findings, based methodology and time of use advocated by Dr. Wilson are more appropriate to the dual goals of equity among the customer classes and energy conservation through improved utilization of generation facilities than the method advocated by Applicant. The Commission finds that the most appropriate rate design available on this record melds the existing "Miller techniques" with the presentation of Dr. Wilson.

52. Dr. Wilson recognized that immediate system wide of use rate was not practicable--that a implementation of time phase in period was necessary. Dr. Wilson (Rebuttal 60) suggested one option regarding implementation:

"One alternative approach would be mandatory schedule for customers in excess of a specified size and voluntary adoption by other--with all customers being charged (on an amortized basis) for their own metering costs."

Wilson further cautioned:

"Moreover, this should not be done in such a way that the added metering costs for very small customers exceed potential benefits."

The Commission finds that both basic and time of use rates are required at present because of the practical delays in obtaining and installing time of use metering.

53. The Commission, therefore, finds that the existing

basic (non-time of use) rate structure based upon the determinations in Docket 6441 is appropriate, except as modified and analyzed below:

1. The residential rate structure shall include the present customer service charge of \$4.00 per month. The evidence of record indicates that a \$5.85-\$7.19 per month customer charge may be justified. Neither the rationale nor the appropriateness of the separate appropriate, expert as modified and service and energy charges were challenged by expert witnesses. The Commission, therefore, adheres to the principals identified and adopted in prior cases recognizing that a more equitable assessment of costs is achieved through separate calculations of energy costs and service costs and, furthermore, that the opportunity to achieve savings through conservation is enhanced. The Commission is, however, concerned about the disparity between the customer charges assessed on a statewide basis. Until the customer charges of other Montana utilities approach those charged on the MDU system, the Commission rejects the proposed \$5.00 per month customer charge.

2. A general service customer service charge of \$10.00 per months shall be initiated. The basis for instituting the charge is request 12 of MCC witness Hess' data request #1. The response to this request is MDU's analysis of customer service charges, which shows the customer costs of the general service class to be \$13.51. To avoid customer displacement the Commission finds that a \$10.00 customer service charge is adequate--with the difference of \$3.51

being recovered in the general classes demand and energy charges. general electric service tariff

3. Energy charges in the shall be reduced from a 6 block rate to a 3 block rate of 0-2000 kwh, 2,000-10,000 kwh and over 10,000 kwh. The differential rate between blocks shall not exceed \$.01 per kwh.

4. A tariff shall be submitted for the industrial class of customers currently receiving power at a contract rate The tariff shall include the contract rates.

5. The revenue reduction of \$88,447 shall be apportioned among the classes upon the basis of kwh sales. The first block in rate schedules having blocked energy charges shall then be lowered by the amount of the total apportioned reduction.

54. Several areas of concern exist relative to the melding time of appropriate marginal cost methodology and resulting use rate schedules between the Wilson and Miller approaches.

On Peak Rate/Off Peak Rate

1. If Wilsons power production and transmission costs are added to the on-peak energy charges, placing it on a comparable basis the optional schedule currently in effect, an on-peak to off-peak energy ratio of nearly 5 to 1 results. He advocates charging these costs to the peak period on p. 127 of his direct testimony, although a demand charge is also advocated. If these costs are recovered through an on-peak energy charge rather than a demand charge, a simpler rate and a more understand able price signal result.

2. If realistic costs per kw of capacity are used, peaker plants would be overused (used more than the 1,000

hours considered optimal by MDU witness Kroeber, Tr. p. 134 lines 7-10) at the 5 to 1 pricing ratio. A rational power planner would use MDU's peaking units 1016 hours at the 5 to 1 ratio if (a) peaker capacity costs are \$195/kw, the cost Wilson uses for peakers currently being constructed by MDU; and (b) if base load capacity costs are \$358/kw the cost of Big Stone plant capacity. However, the peakers would be used 5,177 hours if base load capacity were costed at \$1,025/kw, the estimated cost of the Coyote I plant currently being constructed--and therefore, a more comparable cost to the \$195/kw used for peakers currently being constructed. The Commission realized this fact in MDU's last major rate case by accepting the optional schedules with on peak energy priced at nearly 51-2 times that of off-peak. These peak costs do not completely offset the realistically priced additional capacity costs associated with base load, but do more nearly reflect a 1,000 hour running time considered optimal for peaking units.

Time of Use Rating Period

The Commission finds the rating period for on peak energy as proposed by Dr. Wilson closely conforms with the system load curves of Applicant. The Commission notes that demand decreases substantially after 9:00 p.m. Therefore, in order to recognize the system load curve and at the same time provide the opportunity for residential consumers to avail themselves of off-peak usage within a more normal

life style, on-peak usage is determined as the period 10:00 a.m.-10:00 p.m.

Implementation of Time of Use Rates

As described in Finding 52, a gradual implementation of time of use metering is a practical necessity.

The Commission finds discrimination issues in the implementation alternative suggested in the mandatory/voluntary mix of Dr. Wilson. Furthermore, the limited empirical evidence on the MDU system suggests that an extremely small number of customers have opted for the existing optional time of use rate which provides (1) for a customer purchase of the meter; (2) and the benefit of the lesser rate as between the conventional schedule and the time of use optional schedule. Under the existing time of use option the customer can elect at the end of one year to keep the time of use meter or return it to MDU for a refund of his investment in the meter. The Commission concludes that two reasons have inhibited the customers from adopting this "Can't lose" option: (1) the initial investment; and (2) the lack of information about the availability and potential benefits of the time of use option in reducing the utility bill.

Consequently, a system wide optional time of use schedule should be available to all customers of all classes upon request in order to eliminate any question of discrimination. The metering investment shall be borne by the utility to eliminate the entry barrier of initial investment to the consumer. This technique recognizes that

the dual goal of time of use pricing is equity among customers and reduction of power supply costs through improved utilization of plant.

Dr. Wilson recognized that the costs of time of use metering may exceed the potential benefits for the very small electric consumer. Consequently, mandatory time of use schedules are rejected. The Commission will rely upon a vigorous information program to sell the time of use option to all consumers.

The Commission recognizes that mandatory implementation of time of use rates for particular customers or customer classes may, on the basis of empirical data or comprehensive studies be justified. However, the record in this case does not support that finding. Obviously, there is a threshold cost/benefit analysis necessary to demonstrate the magnitude of benefit to (a) individual consumers through energy use characteristics geared to time of use pricing or (b) to all rate payers of the system through the reduced costs resulting from improved plant efficiency. The Commission trusts future presentations, with benefit of national experience and experience under the optional Program on this system, will quantitatively address this issue.

Industrial Time-of-Use Option

The industrial customers on the MDU system (i.e. Shell Oil Company, Shell Pipeline Company, and Butte Pipe Line Company) will be provided the option of marginal based time-of-use rates at the primary voltage level, secondary level or both. The Commission determines that because a

high proportion of use at the primary level is at a load factor of 94%, it is questionable whether any benefits to the customer or to the utility is possible. During 1977 the total industrial consumption was 142,075,100 kwh, of which 123,211,285 kwh was taken at the primary voltage level. The remaining industrial use (18,863,825 kwh) was taken at the secondary level on a load factor of 41%. Because of the markedly different load characteristics between these service levels and because there was no discussion of record on the benefits to either the customer or utility which for the high load the service level factor basis would result from time of use rates customer, the Commission has provided time of use option. Other customer classes are not offered the service level option because of the relatively similar 38%-48% load factors exhibited during-1977 for the available load data:

	Primary Load Factor %	Secondary Load Factor %
Residential	40%	N/A
General Service	37%	34%
Municipal Pumping	30%	N/A
Other	48%	48%

55. Consequently, the Commission determines that an optional time of which includes the optional time of following elements is appropriate for the MDU system:

1. A \$4.00 per month customer service charge shall apply to residentials, a \$10.00 charge to general service customers, and a \$100.00 charge to industrials.

2. The company shall purchase all special metering to provide the special service.

3. The on peak period shall be 10 a.m. - 10 p.m weekdays. Weekends and holidays shall be charged at off peak rates.

4. After a consumer has specified the optional schedule he shall be bound to pay charges incurred under such schedule and shall agree to contract for said service for a minimum period of one year.

5. Any change in revenue due to the Commission's approval of a lower customer service charge than that proposed or due to a change in peak periods will be recovered in the energy charges. The same ratio of peak energy charges to off-peak energy charges shall be maintained.

6. All customers shall have the opportunity to specify the optional schedule. Those customers who have opted the marginal rates for in effect prior to this order may:

A. Finish their contract period provisions of that contract, with the exception of the differing rates provided for in this order.

B. Terminate their contract on or after the date this order becomes effective.

In either case, any special meter costs incurred by the customer shall be returned to him at the end of his contract period. All contracts provided for under MDU tariffs "Experimental 16-M" and "Experimental 26-M" shall terminate

one year from the date this order becomes effective.

7. The industrials on the MDU system, i.e., Shell Oil Company, Shell Pipe Line Corporation and Butte Pipe Line Company will be provided the opportunity to opt for the marginal time-of-use rates. The optional rates will apply to power taken at: 1. the primary distribution level. or; 2. the secondary or; 3. both levels.

8. All the optional marginal time-of-use schedules shall be consistent with revenue amounts found appropriate in this order.

Part H
 Capital Structure and Associated Costs
 Gas Utility

CAPITAL STRUCTURE

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

<u>Description</u>	<u>Capital Structure</u>	<u>Cost</u>	<u>Weighted Cost</u>
Capital Associated with In Service Rate Base:			
Long Term Debt	\$116,820,000 (50.63%)	7.483%	3.79%
Preferred Stock	26,000,000 (11.27%)	6.574%	.74%
Common Stock	<u>27,890,000 (38.10%)</u>	15.25%	<u>5.89%</u>
	\$230,710,000 (100%)		10.35%

Description

Capital Associated with CWIP:			
Long Term Debt	50%	9.25%	4.625%
Preferred Stock	10%	9.00%	.900%

Common Stock

$\frac{40\%}{100\%}$

15.25% $\frac{6.100\%}{11.625\%}$

Description	Rate Base	Rate of Return	Dollars of Return	Rate of Return	Overall Rate of Return
In Service	\$115,196,000	10.35%	\$11,922,786 (96.43%)	10.25%	9.98%
CWIP	3,798,900	11.625%	441,622 (3.57%)	11.625%	.42%
TOTAL			12,364,408		10.40%

* Constitutes what MDU feels to be an optional capital structure

57. 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	\$ 59,749,060 (50.31%)	7.57%	3.81%
Preferred Stock	13,310,220 (11.21%)	6.71%	.75%
Common Stock	45,704,520 (38.48%)	12.25%	4.71%
	\$ 118,763,800 100%		9.27%

58. The Commission accepts the following capital structure for the same reasons stated in Finding of Fact 18.

	Long Term Debt	Preferred Stock	Common Stock
Per MCC	\$59,749,060	\$13,310,210	\$45,704,520
Retirements	(1,730,300)	(397,320)	
Issuances			6,257,790
Investment in Subsidiaries			(415,373)
Total	\$58,018,760	12,912,900	\$51,546,937
%s	47.37%	10.54%	42.09%

RETURN ON DEBT

59. Total long term debt costs advocated by the applicant and MCC are identical before the retirement of \$3,484,000 as presented in the applicants case. In splitting the capital structure 49.665% of the retirement is allocated to gas operations.

The Commission accepts the retirement and finds 7.57% to be the cost of long term debt.

RETURN ON PREFERRED STOCK

60. Total preferred stock costs advocated by MDU and MCC are identical before the retirement of \$800,000 as presented in the applicant's case. In splitting the capital structure 49.665% of the retirement is allocated to gas operations.

The Commission accepts the retirement and finds 6.574% to be the cost of preferred stock.

RETURN ON EQUITY

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

A. The applicant recommends a 15.25% return on gas utility equity which is a .75% higher return on gas utility equity than on electric utility equity. The higher return is recommended because of the "increased risk and volatility of earnings" borne by gas utility investors. MDU's witness Kuric states on page 2 of his rebuttal "Certainly, at the very minimum, an increment of .75% in the rate of return on equity of the gas utility should be allowed in recognition of the 1977 per books performance, in Montana, as shown in this exhibit."

First, the Commission has above approved a 12.00% return on electric equity. Therefore any increment would apply to that amount.

Second, the Commission feels that some of the financial risk spoken of has been alleviated through MDU' s quarterly gas cost tracking applications; necessitating a lesser increment than is recommended by MDU. This is shown in cross-examination of MDU president Schuchart by Mr. Smith:

"Q. Referring you to page 4 and line 6 of your testimony, Mr. Schuchart, and you state that "in 1977 your gas operations produced a loss of .70 percent." And at page 8 in the annual report you state that the primary cause for the decrease in earnings could be attributed to rapid escalation of purchase gas cost. I was just wondering in your capacity if you have had enough information to form an opinion as to the quarterly tracking applications and if they are going to change this overall situation, or I am just looking for your assessment of that new procedure.

A. Yes, we would certainly expect that this would alleviate a very severe lag that we

experienced in 1977 "

The Commission feels that the electric portion of MDU faces more severe financial risks than the gas utility due to the increasingly large capital investment required to construct generation facilities. However, the gas utility faces greater business risks since natural gas is a nonrenewable resource.

B. MCC recommends a 12.25% return on gas equity. The return is based upon DCF analysis and comparable earnings analysis performed upon 15 "comparable" gas companies. The use of 15 gas companies does not constitute as wide or as unbiased a group of comparable companies as is presented for electric operations. However, the Commission feels that they are the best presented in evidence. The Commission also discussed and accepted the merits of MCC's DCF analysis in its determination of the electric equity return.

C. A 12.15% return would result if the same computation used to determine the electric equity return was used to determine the return on gas equity:

MCC's Comparative Earnings Analysis	11.41%
MCC's DCF Method	12.25%
MDU's Market Appraisal Study	<u>12.80%*</u>
	36.46%
	<u>-3</u>
	12.15%

* A market to book ratio of 1.03 is used. The regression equation pertaining to the 181 gas, combination and electric utilities is used.

The Commission feels this result is distorted because MDU does not develop a regression equation for gas and combination utilities in their Market Appraisal Study as is done for electric and combination utilities upon which the electric equity return approved by the Commission is, in part, based. Therefore, the Commission rejects 12.15% as a fair rate of return on gas equity.

D. The Commission approved a rate of return for gas equity .25% above that for electric equity in MDU's last general rate increase application, Docket 6441.

62. The Commission finds a 12.25% return on gas equity appropriate as follows:

A. Risks faced by the gas utility as opposed to those faced by the electric utility warrant a .25%

return on gas common equity. This is consistent with the risk differential approved by the Commission in MDU's last general rate case and it has not been shown in this proceeding that this risk differential has changed. Adding .25% to the electric common equity return approved results in a 12.25% return on gas equity.

B. MCC's gas equity DCF analysis, which the Commission has accepted above, presents a gas equity return of 12.25%.

63. 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 determined appropriate:

Type	Capital Structure	Cost	Weighted Cost
Long Term Debt	47.37%	7.57%	3.59%
Preferred Stock	10.54%	6.574%	6.574%
Common Stock	42.09%	12.25%	<u>5.16%</u>
Total			9.44%

Part I

Jurisdictional Allocation Factors

Gas Utility

64. The applicant allocates costs to the various jurisdictions via the following methods:

A. Demand related costs are allocated according to a two day system peak and average demand factor.

B. Commodity related costs are allocated according to Mcf deliveries by jurisdictional

area.

MCC's witness Hess takes exception to the applicants method of demand cost allocation, stating on pg. 25 of his direct testimony:

"It is not fair to say that Mr. Chick's method of allocating gas costs among jurisdictions is a widely accepted method. Although it has been accepted in the other jurisdictions in which MDU operates, I know of no other company that uses MDU's method of allocating fixed costs associated with gathering and transmission plant. MDU's two-day peak and average demand factor gives two-thirds weight to peak requirements and one-third weight to annual volumes."

However, MCC accepts the allocation methods after testing an allocation method based on a little change in result.

MCC also states that Mr. direct testimony, i.e. "The 100% commodity factor and finding

Price's statement on page 7 of his entire gas system owned by MDU (except its Crookston, Minnesota system) is, therefore, a unitary operation, or integrated system," is indicative of the fact that the Big Horn and Sheridan systems should be rolled in for purposes of future rate proceedings.

Continental Oil Co.'s witness Ranson uses the following methods:

A. Production. gathering and storage demand costs are allocated on the basis of the three day winter peak. Those commodity costs are allocated according to Mcf deliveries by jurisdictional area.

B. Transmission demand costs are allocated by Mcf miles on the three day peak and commodity costs on the basis of Mcf miles by jurisdiction.

The Commission finds this method inappropriate for the following reasons:

A. Unless this allocation method were accepted in each state MDU operates in, the utility would recover less than 100% of its costs (C.E. Chick Rebuttal pg. 7 lines 5-17) Conoco has not assured the Commission that the method will even be proposed in the other

states, let alone be accepted.

B. On MDU's system where many sources of supply and uses exist, the determination of Mcf miles is subjective. (C.E. Chick Rebuttal pg. 6 lines 15-24).

65. 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.

Part J
Rate Base
Gas Utility

66. The following rate base amounts are forwarded:

	Applicant	MCC
Plant In Service	\$52,856,006	\$51,693,00
Accumulated Depreciation	(20,168,417)	(19,518,000)
Gas Stored Underground-Noncurrent	4,149,281	4,125,000
Advance Payments for Gas	976,201	742,000
CWIP In Service at Year End	161,580	162,000
Gas Stored Underground-Current	566,397	723,000
Materials & Supplies	766,832	812,000
Customer Advances for Construction	(89,458)	(94,000)
Accumulated Deferred Income Taxes	(2,796,845)	(2,641,000)
Accumulated Investment Tax Credits	<u>(524,063)</u>	(504,000)
Total Rate Base Per Books	35,897,514	35,500,000

Rate Case Adjustments:

Plant Leased to Others	228,376	228,000
CWIP In Service-Overheads	25,786	26,000
Materials & Supplies	86,128	40,000

Gas Stored Underground	1,073,729	(458,000)
Adv. Gas Payments Reduced to 9/30/78 Levels (66,019)		-0-
CWIP Provided for Existing Customers	<u>1,387,024</u>	-0-
Total Adjusted Rate Base	38,632,538	35,336,000

67. The year and rate base vs. average rate base and CWIP issues have been discussed in the electric section. The other major adjustment pertains to gas in storage. MCC witness Hess determined that a net withdrawal of gas from storage occurred rather than a net injection, as was presented in MDU's presentation. (G.F. Hess Direct pg. 20, lines 1-9) Based on the evidence, the Commission accepts MCC's adjustment.

68. The Commission accepts \$35,336,000 as the proper rate base amount in this proceeding.

Part K

Revenue & Expense Gas Utility

69. The following cost of service recommendations are made in this proceeding:

	Applicant	<u>CC</u>
Operating Income at Present Rates (per books)	(86,819)	(87,000)
Pro Forma Adjustments	<u>(829,889)</u>	<u>944,000</u>
Net Adjusted Operating Income at Present Rates	(916,708)	<u>\$757,000</u>

70. Differences in pro forma adjustments are as follows:

A. Adjustments A, B, E, F, G and H as discussed in Findings of Fact 40 and 41 for the electric utility are similarly adjusted by the parties for the gas utility.

B. The applicant adjusts gas revenues for the tracking increases applied for at the time of this application. The Commission, however, granted slightly less than the increases sought. Also, MDU applies the tracking increases to annualized sales. MCC adjusts the tracking increases to amounts actually allowed and does not use annualized sales.

C. The applicant adjusts purchased gas expenses to reflect gas costs it forecast would be in effect during the 4th quarter of 1978. MCC uses 1st quarter 1978 prices to value purchased gas expenses.

D. Applicant did not include gas withdrawn from storage in its gas costs. MCC did include such amounts.

71. The Commission finds the following:

A. The merits of these adjustments have been discussed under the electric utility section. Therefore, the Commission rules in an identical manner with regard to these adjustments in this section.

B. The actual tracking increase amounts granted by the Commission are accepted. This information was not available at the time that MDU filed this application. Also the application of these increases to annualized sales is not accepted for the same reasons annualized sales in general have not been accepted in this proceeding.

C. The first quarter synchronize with Commission. Also 4th quarter costs do not constitute a known and measurable change.

D. From the best evidence in this record the Commission accepts, for the computation of gas costs, the withdrawal of storage gas. This net withdrawal

also reduces the rate base, as has been adjusted for.

E. Docket 6612, an MDU gas tracking case was approved during this proceeding. The Commission accepts into this docket the additional revenues and expenses associated with the acceptance of docket 6612 and also sets the base cost of gas in this proceeding at 90.02584/Mcf.

72. The Commission finds These following cost of service appropriate in this proceeding:

Operating Income at Present Rates	(87,000)
MCC's Pro Forma Adjustments	884,000
Interest Expense Adjustment (Finding of Fact 71A)	(14,000)
Purchase Gas Adjustments (Finding 71E)	<u>(22,000)</u>
Approved Test Year Net Income Being	
Currently Earned	\$721,000

Part L

Revenue Calculation

Gas Utility

73. The Commission finds that the increase in annual revenue required in MDU >s Montana gas operations is \$5,392,283 as follows:

Rate Base, as approved	35,336,000
Overall Rate of Return, as approved	x 9.44
Approved Net Income	3,335,718
Add: Expenses, as approved	+24,911,565
Gross Operating Revenues, as approved	28,247,283
Less: Test Year Gross Operating Revenues	
Currently Being Earned	-22,855,000
Increase in Annual Gross Operating Revenues	
Granted Applicant	5,392,283

Part M

Rate Structure

Gas Utility

74. MDU proposes that gas demand costs be allocated on the basis of two-day peak and average demands. Energy costs are allocated on the basis of Mcf's. This methodology weights peak costs at a 2 to 1 ratio over energy. The allocation technique proposed assigns undue weight to peak when the main costs to supply gas are associated with the commodity itself. C. E. Chick, who advocated this method, states on pg. 5 of his rebuttal "I agree with Mr. Hess that the two-day peak and average demand method that I have used does tend to give greater weight to demand and less to commodity than perhaps should be used."

75. MCC witness Wilson has proposed a flat commodity charge for both general and industrial customers (as opposed to a 2 block rate proposed for general customers by MDU). Wilson has also proposed a 5¢/Mcf differential between general and industrial customers to reflect the fact that industrial customers can and are being curtailed, and therefore receive a lesser level of service than others. MDU's current and proposed general gas service schedules recognize a five cent reduction as a special discount for interruptible gas service.

76. MDU proposes a \$5.00 customer service charge for general customers and none for industrials. Wilson has proposed \$4.35 for residentials, \$10.00 for commercials and \$100.00 for industrials on the basis that customer charges increase on a nonproportional basis with sales.

77. The Commission recognizes that gas utilities have different problems than those faced by electric utilities. Gas utilities are faced with possible dwindling supplies and usage rather than the increasing costs/usage faced by electrics. Also, gas can be stored and therefore peaking problems are alleviated somewhat (even though not as much gas would have to be stored if usage were constant). The primary area of concern for gas utilities is the depletable and therefore valuable quality of gas. In a decreasing supply and usage situation

gas plant is of secondary importance. J. W. Wilsons states on pg. 148 lines 5-14 of his direct testimony;

"The Central problem in the electric utility industry is wasted capacity and scarce capital resources.

However, in the gas industry capacity is generally ample (indeed, as shortages grow, it will become excessive) and gas is storable (so as to facilitate the meeting of peaks) but scarce. Under these circumstances, the optimally efficient economic pricing solution is to give the sunk costs of overbuilt transmission capacity a zero weight and to recoup total revenue requirements largely on a volumetric basis.

The question of curtailment and level of service has also been raised, i.e. should a customer undergo the double economic burden of high volumetric rates and curtailment. In this instance the industrials are the only customers being curtailed. It should be noted, however, that they can most easily convert to other fuels. Therefore, if the value of gas is compared to other and a switch is made available alternative fuels by the consumer, to another fuel, it is evident, then, that an efficient pricing method for coping with gas supply shortages is being used. Commission finds that a flat energy charge will provide proper pricing signals to all users.

78. The Commission -accepts a flat energy charge for the customer classes with the industrial rate being 54/Mcf (adjusted for pressure differences) lower than the general service rate. The charges shall be computed using volumes and customer numbers accepted in this docket.

79. The Commission accepts customer charges of \$4.00 for commercial and \$100.00 for

residential customers, \$10.00 industrial based on:

A. The fact that the customer costs do increase with the increase in non proportionate to usage; although the increase in usage.

B. The response to Request 12 of MCC witness Hess' data request #1 shows customer costs of the residential class to be \$7.23 and customer costs of the commercial class to be \$21.49. To avoid customer displacement, the Commission finds the customer charges as stated above.

CONCLUSIONS OF LAW

1. The rate bases determined in Finding of Fact No. 38 for the electric utility, and Finding of Fact No. 68 for the gas utility reflect original cost depreciated value. These values comply with the requirements of R.C. M. 1947, Section 70-106, that the value placed upon a utility's property for ratemaking purposes "shall 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. The Applicant's advocacy of the legality of an inclusion of Construction Work In Progress (CWIP) in rate base finds support only in a selective reading of the statute. Section 70-106, R.C.M. 1947, states in pertinent part:

Power of commission to ascertain property values. The Commission may, in its discretion, investigate and ascertain the value of the property of every public utility actually used and useful for the convenience of the public.

The Commission reads this statute as a prohibition on the inclusion of CWIP

in rate base, and sees no possible ground for reasonable persons to disagree that the legislature has not granted the Commission jurisdiction to consider the matter.

4. Section 70-105, R.C.M. 1947, declares:

70-105. Public utilities to furnish service for 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 70-104, R.C.M. 1947, grants this power:

70-104. Power to prescribe rules of procedure--judicial power. 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 act conferred 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 of Knife River's profits that MDU is paying excessive prices for coal and makes appropriate adjustments.

5. The rate of return allowed in this order meets the constitutional requirement that a public utility's return must be "commensurate with 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).

6. 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. Montana-Dakota Utilities shall file rate schedules reflecting acceptances and determinations in the findings of fact in this order and the stipulation in Docket 6636 dated December 18, 1978 which states: "Comes now Montana-Dakota Utilities Co. and stipulates that the federal income tax rate to be used in the final order in Docket 6567 is 46%. This may be used even though no evidence to that effect was introduced in Docket No. 6567." Schedules shall also be filed showing the effect of the change in tax rates from 48% to 46% on the annual electric revenue decrease of \$88,447 and on the annual gas revenue increase of \$5,392,283. The tariffs shall become effective when approved.
2. Rate schedules shall be filed in accordance with the Commission's determinations and acceptances in the "Finding of Fact" sections of this order.
3. All motions and objections not ruled upon are denied.

Done in Open Session at a meeting of the Montana Public Service Commission held December 18, 1978 by a vote of 4-1.

GORDON E. BOLLINGER, Chairman

P.J. GILFEATHER, Commissioner

JAMES R. SHEA, Commissioner

Voting to Dissent

ATTEST:

Madeline L. Cottrill
Commission Secretary
(SEAL)

NOTE: You are 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. 82-4216, R.C.M. 1947; and Commission Rules of Practice and Procedure, esp. 38-2.2(64)-P2750, ARM.

DISSENT OF COMMISSIONER JAMES R. SHEA

In the above docket, hearings were held in Billings and Miles City. Members of the consuming public testified at both cities.

There are many times when equity and decision demands a moral and human obligation beyond strictly high profits.

It is strange to me that no where in this order is reference made to public testimony of Montana consumers other than the Montana Consumer Counsel. Some of the public witnesses who testified were former State Senator Charles Mahoney, now of Miles City; Steve Trenka of Billings, and Dyanne J. Lehman of the Human Resources Council of Billings. All of these people stated they believed the four dollar (\$4.00) charge on electricity and the four dollar (\$4.00) charge on gas were excessive and not equitable.

Chris Olson of Forsyth, Montana traveled to Miles City, a distance of some 45 miles, at his own expense to protest the four dollar (\$4.00) gas charge-base rate. Alyce Jerrel, of Miles City, protested the rate increase request and said that hundreds of people signed petitions in opposition to rate increases.

It must be noted here, that prior to 1977, Montana-Dakota Utility did not have a base rate at all. The change in rate structure came from an order of the Montana Public Service Commission; and I believe now that this structure is not to the consumer's best interests, However, I did vote for the \$4.00 charge in Docket No. 6441, Order No. 4369, as did all commissioners.

From public testimony in this case before us, I believe a correction should be made.

Here are some of the proposals by Montana-Dakota Utility and the findings and determinations of the Montana Public Service Commission.

ELECTRIC

Residential M.D.U.) M.D.U. proposed raising residen-
Request) tial base charges from \$4.00 to \$5.00

Commission) Commission ordered rate to stay same.
Order)

Commercial M.D.U.) M.D.U. proposed raising the mini-
Request) mum rate from \$2.00 to \$2.25

Commission) The Commission by this order went far and beyond
Order) The company=s request. The Commission granted
A base rate of \$10.00 which is an increase of 400%.
Yet, no energy at all is received for this \$10.00

GAS

Residential M.D.U.) MDU proposed raising the minimum
Request) rate from \$ 4.00 to \$5.00
Commission) Commission voted to retain \$4.00 rate
Order)

Commercial MDU) MDU proposed raising rates from \$4.00 base rate to \$5.00

Commission) The Commission raised the base rate here from \$4.00
Order) to \$10.00, an increase of 150%. Again no gas usage
is allowed for the \$10.00

INDUSTRIAL GAS

MDU) MDU did not propose a base rate
Request)

Commission) The Commission order puts a base rate of \$100.00 a month-\$1,200.00
a year. Order) These customers can be cut off from power during
emergency periods. Interruptible Customers. No gas can be used for this
\$1,200.00 yearly charge.

It would appear to me that for a \$1,200.00 service charge, a customer
should be allowed some consumption.

These are "Standby Charges". The customer stands by and the
This high charge goes contrary to reasons utility collects \$20.00. for promoting
alternate fuel uses and conservation. The customer pays \$20.00 whether one
conserves or not.

These base charges to me seem to be a "head charge" or service charge and even Mr. Lowell Gamble of the M.D.U. (Treasurer) said these charges are a new concept in rate making.

These customer charges, in many instances, penalizes conservation by the public. In the commercial rates, a very small user of gas and electricity will pay \$240.00 a year without any fuel usage for this cash outlay. I do not believe this to be a fair rate.

Next year will it be \$300.00 or 500.00?

This formula of rates structured and built by this Commission gives the Montana-Dakota Utility a bonanza. It gives the utility a guaranteed method of extracting hundreds of thousands of dollars from its customers each year without the actual usage of energy by the customer.

No where in the publication of notice have I observed that this increase and drastic change was to be considered by the Commission.

In this current order, the Commission states that it is concerned about equality among customers statewide, and reels that the Montana-Dakota Utility, charge should remain at \$4.00 as a residential minimum until other areas in the state approach this level.

Where is the consistency of this reasoning? If one examines the rates herewith, sizeable differences in rates will now be in effect between the Montana-Dakota Utility and the Montana Power Company. I believe the \$4.00 minimum on electricity and the \$4.00 minimum on gas for Montana-Dakota Utility customers should be reduced to \$2.50. Please observe the rate differentials or minimum charges between Montana-Dakota Utilities and Montana Power Company.

The minimum rates for Montana Power Company and the Montana-Dakota Utility are listed below:

Montana-Dakota Utility	Montana Power Co.
Residential Electric	\$ 4.00 \$ 2.25
Residential Gas	\$ 4.00 \$ 2.58
Commercial Electric	\$ 10.00 \$ 1.59
Commercial Gas	\$ 10.00 \$ 4.88
	(includes IM.CF)
Industrial Gas	\$100.00 NONE

Too many times the Commission's ultimate decisions are based on what out-of-state witnesses testify to. We do not listen enough to Montanans, the ones that foot the bills.

The Montana-Dakota Utilities entitled to a fair rate of return, but as a monopoly, it should not be ordered to impose a rate structure upon the people when the people object or can go to no other market place. The customers were not give sufficient notice of these proposed changes.

"The users of the product should pay for the consumption, not those that conserve." During the hearing, it was testified to by M.D.U. that M.D.U had increased its earnings per share in May of 1978. Earnings per share in May 1977 were \$1.85; in May of 1978 they had increased to \$2.61.

This is a sizeable increase in earnings.

In the next few months, Montana-Dakota Utility customers will be feeling the heavy burden on natural gas rates caused by federal deregulation.

The president has asked everyone to help control or restrict the rate of inflation

To place this extra burden of rate increases upon the public at this time and because of the unfairness of the rate structure, I dissent to the majority opinion.

JAMES R. SHEA

ATTEST:

MADELINE L. COTTRILL

(Secretary)

(Seal)