Service Date: August 17, 1977

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

IN THE MATTER OF the Application OF MONTANA-DAKOTA UTILITIES COMPANY for Authority to Establish Increased Rates for Natural Gas and Electric Service.	))))))	UTILITY DIVISION DOCKET NO. 6441 ORDER NO. 4369

APPEARANCES

For the Applicant:

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For the Protestants and Intervenors:

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For the Commission:

William J. Opitz, Administrator, Utility Division
Frank E. Buckley, Utility Rate Analyst
Dennis R. Lopach, Attorney at Law

Before:

Gordon E. Bollinger, Chairman
P. J. Gilfeather, Commissioner
Thomas J. Schneider, Commissioner
James R. Shea, Commissioner
George Turman, Commissioner

Having fully considered the evidence of record in this Docket, and being fully advised in the premises, the Commission makes the following Findings, Conclusions, and order:

FINDINGS OF FACT

Part A

General

1. On August 11, 1976, Montana-Dakota Utilities Company (MDU, Applicant or Company) filed herein its application for increased rates and charges to all classes of its Montana customers to generate approximately $2, 549,000 additional revenue from electric service, and approximately $2,434,000 additional revenue from gas service. These additional revenues requested included amounts requested by MDU in Docket No. 6277 which were in excess of a temporary increase in that Docket approved by the Commission on March 3, 1976, in Order No. 4245.

2. On November 15, 1976, the Commission issued Order No. 4245A in Docket No. 6277. That Order granted MDU $60,000 in electric service and $11,000 in gas service in excess of the Order No. 4245 temporary rate levels. Accordingly, Order No. 4245A had the effect of reducing the revenues requested in this Docket to $2,489,000 for electric service, and $2,424,000 for natural gas service.

3. A prehearing conference for the purpose of establishing a timetable and procedural guidelines for the disposition of this Docket was conducted on October 7, 1976. This conference was noticed by means of a letter mailed to the Docket No. 6977 service list. The Montana Consumer Counsel (MCC) refused to participate, alleging that the notice was legally deficient;

4. On October 8 an Order for Procedure was adopted by the Commission. This Order was based upon "the Commission's inherent power to establish guidelines to govern its hearings." The Order provided deadlines and procedures for intervention, data requests, and the prefiling of all testimony, among other things.

5. Also on October 8, 1976, a legal Notice of Filing and Deadline for Intervention was mailed to seven eastern Montana newspapers, as well as to parties known to be interested in this proceeding. This

notice was designed to inform the general public of the nature of MDU's application, to make clear the existence or a deadline for intervention, and to explain the existence of the Order for Procedure and the importance of securing a copy in order to make participation in the proceedings in this Docket meaningful.

6. With the cooperation or all parties, the Order for Procedure was followed and the issues related to the application fully explored and developed in advance of hearing.

7. On February 17, 1977, a Notice of Public Hearing in this Docket was mailed to eight eastern Montana newspapers for legal publication.

8. On March 14, 1977, at 10:00 a.m., the hearing in this Docket commenced in the Commission's conference room. The hearing concluded on March 18, 1977.

9. The Commission wishes to make clear to all participants in this case its sincere appreciation of their cooperation. Admittedly, the procedure employed in this case was somewhat novel. However, this procedure allowed the Commission to conduct a greatly shortened hearing. In addition, this procedure was very useful as a means of focusing issues, and of keeping the issues before the Commission at all stages of the case. Largely because of the cooperation of the parties in this proceeding, the Commission has adopted a similar procedure in subsequent cases, and expects to continue to use similar procedural devices in coming cases. Shortened and simplified hearings, as well as effective and streamlined case management, are clearly in the best interest of both the public and the utilities.

Part B
RATE OF RETURN
Capital Structure

10. MDU's primary rate of return witness, Robert Jackson,

-advocated the following capital structure with associated costs:

COST OF CAPITAL SUMMARY

PRO FORMAT DECEMBER 31, 1975

Amount	Col. 1 Capitalization (000's)	Col. 2 Ratio		Col 3. Cost		Col.4 Return
		----------percent)---------------				
Long-term Debt						
Outstanding	$106,861	46.8	x	7.12	=	3.33
To be issued - 1976 ..	20,000	8.7	x	9.50	=	0.83
Total	126,861	55.5	x	7.50	=	4.16
Preferred Stock	28.600	12.5	x	6.95	=	0.87
Common Stock Equity (1)	73,085	32.0	x	14.50	=	4.64
TOTAL Permanent Capital	$228,546	100.00				9.67

(1) Total Common Stock Equity (12/75) $82,549
Less - Investment in Subsidiaries 9,464

Balance $73,085

(Exhibit F, Schedule 14)

Mr. Jackson did not allocate. the capital structure to the gas and electric utilities. Accordingly, the Commission is unable to examine the equity return requirements of these two departments separately.

11. The contemplated 1976 debt issuance shown above in Jackson's table occurred on September 30, 1976. Mr. Schuchart testified that $10 million of first mortgage bonds were sold at a coupon rate of 8-5/8%, and $10 million of sinking fund bonds were sold at a coupon rate of 8-1/2% (Rev'd Dir., p. 7). .

12. The Company's rate of return presentation was countered by that of staff witness Dr. John W. Wilson. Wilson presented the following capital structure, with related component costs:

Capital Structure and Rate of Return
(Projected 12/31/76)

	Amount ($ thousand)	Percent	Rate (%)	Weighted Cost
Long-term Debt	$122,839	53.325	7.324	3.91
Preferred Stock	28,600	12.415	6.801	.84
Common Equity *	78,320	33.999	11.500	3.91
Unamortized Gain on Reacquired Debt	600	.260		
	$230,359			8.66%

*/ Total Common Stock Equity $91,200**/
Less - Investment in Subsidiaries 12,800***/
....78,320

**/ Year End Estimate made by Value Line on 11/5/76.

***/ Estimated based on 1974-75 growth rate.

(Exhibit S-7,jw-14, p. 2 of 2)

13. The Commission finds that Dr. Wilson's capital structure should be adopted. Wilson's capital structure incorporated actual 1976 information, while Jackson's projections were never updated. Because this recent data is now before the Commission, there appears to be no reason to utilize a capital structure which fails to take account of known changes. An example of a change reflected by Wilson, beside the actual cost of 1976 debt issues, is the change in the debt component occasioned by 1976 retirements. Wilson also included MDU's gain on reacquired debt in his capital structure at no cost. The Commission agrees with Dr. Wilson that the unamortized balance of the gain is properly included in the capital structure (J. W. Wilson Dir.-, p. 26).

14. MDU's Edward Mattutat argued that, should the Commission accept a pro forma depreciation reserve deduction from rate base for the Big Stone plant, as proposed by MCC witness Hess, then an adjustment to the common equity component of the capital structure was needed for consistency. He contended that tine' equity component should reflect the

retained earnings that would have accrued had any increase allowed in this Docket been earned throughout the test year (Dir., p. 62). As discussed below; (Finding No. 41), Mr. Hess' adjustment is accepted. The Commission declines, however, to adjust the equity component of the capital structure for pro forma retained earnings. Without addressing the merits of Mr. Mattutat's contention, it appears that the impact of adjusting the equity component for pro forma retained earnings would be so slight that the weighted cost of equity would be unchanged.

Cost of Debt

15. Witnesses Jackson and Wilson differed as to the proper manner of computing the cost of two of MDU's pollution control bond (PCB) issues. The differing approaches resulted in the following costs:

	Jackson	Wilson
Richland County PCB's	8.02%	7.84%
City of Beulah PCB's	6.97%	6.86%

16. The Commission accepts Dr. Wilson's calculation of these costs. PCB's such as these consist of a series of bonds bearing different maturity dates. Jackson approached the determination of their respective costs by weighting each series by both its term in years and its principal amount (Tr. 63). Wilson explained that this approach overstated the cost by giving greater weight to the bonds with longer maturities (Tr. 88).

17. The Commission finds that MDU's cost of debt is 7.324%.

Cost of Preferred Stock

18. Jackson and Wilson differed on MDU's cost of preferred stock, Jackson finding a 6. 95°o cost, and Wilson a 6.801% cost. Wilson rejected the assertion that there was any outstanding stock expense associated with the preferred stock issues, noting that MDU's 1975 Form No.1 report to the Federal Power Commission showed no such expense. Mr. Jackson responded on rebuttal that the expense was shown in the 1974 Form No. 1, and did not show up in the 1975 report because the expense vies charged off in the same year in which it was incurred (Reb., p. 3). MDU's answer brief asserts that the expense was "charged to surplus" (p. 5).

19. By Mr. Jackson's testimony, the stock expense associated with certain preferred issues was charged off in prior years. The record is devoid of any evidence that these expenses have not already been fully recovered. To allow the expense as a part of the cost of preferred stock, absent evidence that there is still an outstanding expense, might well permit a double recovery of these expenses. The Commission agrees with Dr. Wilson that such an approach is undesirable and unwarranted on this record.

20. MDU's cost of preferred stock is found to be 6.801%.

Cost of Equity

21. Company witness Jackson advocated an equity return of between 14.5% and 15.5% (Dir., p. 24). This return was determined as the result of a comparable earnings and discounted cash flow (DCF) analysis. Using these same basic tools, Dr. Wilson suggested an 11.5% return.

22. Jackson's comparable earnings study relied upon thirteen comparison companies, six of which operate in the State of Iowa. This very narrow basis for comparison, weighted heavily toward a single regulator:, climate, differs substantially from Dr. Wilson's comparable earnings approach. Wilson examined the cost of equity to hundreds of companies in both the regulated and unregulated sectors. His analysis, based as it is on a far broader sampling of relevant businesses, offers the Commission a

much sounder basis for decision.

23. The DCF approach was utilized by both Jackson and Wilson. MDU's initial brief argued, however, that Wilson took pains to represent his DCF study as an exact science, yielding a precise cost of equity. Mr. Jackson, on the other hand, was cited as recognizing that the DCF study was simply an additional tool, and in no way intended to disguise the fact that the determination of the cost of equity is ultimately an exercise of judgment.

24. The Commission is well aware that the determination of the cost of equity involves judgment. The most that can be said for any rate of return witness is that he offers the Commission a reasoned basis for the exercise of that judgment. In this case the Commission must decide which witness has presented the best analysis, and thus the best foundation for an informed exercise of judgment.

25. Both Jackson and Wilson relied upon their comparison companies as the basis for estimating the growth factor component of their DCF calculations. Both witnesses looked to growth rates in dividends per share, earnings per share, and book value per share. By limiting his analysis to the same thirteen companies, however, Jackson again slanted his analysis toward a single regulatory climate, while Wilson examined a broad cross-section of the economy.

26. Barrie Wigmore, MDU' s rebuttal rate of return witness, criticized the DCF approach in general and Dr. Wilson's application of it in particular. He listed five "errors" in Wilson's analysis and commented on each (Reb., pp. 11-17). After Wilson responded to each assertion of error, however, Wigmore declined to expand upon his assertions.

27. Wigmore's primary concern appeared to be that Wilson's DCF study "ignores changes in stock price" (Reb., p. 11). Wilson responded that "the future price of common stock is an explicit

consideration in the DCF concept" (Tr. 216). On the basis of the record, it seems obvious that tin Wigmore lacks a full grasp of the DCF model.

28. Wigmore stressed at length his concern that allowed and earned returns on equity must be distinguished in view of the recent financial history of the utility industry. He concluded that MDU should be allowed a return on equity 1-1/2 - 2% above the 14 - 15% it must realize. I recommend an allowed 15-1/2% to 16-1/2% return on equity" (Reb., p. 25).

29. The Commission finds that Dr. Wilson's 11.54 recommended return on equity is reasonable and should be adopted. As discussed above, Wilson relied upon a far broader sample of companies than did Mr. Jackson in conducting his comparable earnings and DCF studies. Mr. Wigmore offered a knowledgeable dissertation on the past difficulties of the utility industry, but was very reluctant to concede that conditions have improved. The Commission rejects Wigmore's contention that equity earnings should be high enough to restore the utility industry to the conditions of the 1960's. The relevant time frame for consideration is that of today, and only recent market conditions are of overriding importance.

30. The Commission also rejects Wigmore's asserted requirement of a 1-1/2 to 2% "attrition allowance." Such an approach would create a wholly artificial "cost" of equity, unrelated to actual conditions. Inflation of one cost beyond actual experience makes no sense. Were economic conditions to change, halting. whatever erosion of earnings is now taking place, then MDU would rind any "attrition allowance" converted into simple excess earnings. The Commission finds that the allowed return on equity should reflect actual market requirements, rather than an artificially inflated figure.

Part C

ELECTRIC UTILITY

Rate Base

31. Staff presented a fully forecast 1977 test year, which was opposed by the Company, which contended that forecasts are valid only when done by persons intimately familiar with a utility's operations. The Commission thanks staff for its efforts, but declines to utilize the forecase data. Utilizing an historical 1975 test year, adjusted for known changes, the Commission finds the following electric utility rate base:

Electric Utility Rate Base Allocated to Montana
1975 Test Year (Average)
(000)

	Allocated to Montana		
	12-31-74	12-31-75	Average 1975
	(A)	(B)	(C)
Net Book Cost of Plant in Service			25,613
ProForma Adjustment			
Book Cost			
Big Stone Plant.	$9,843	$ 46	4,944
Pollution Control Facilities.	4,155	1,209	2,682
Construction Work in Progress in Service	n/a	74	74
Depreciation Reserve			
Big Stone Plant.		270	135
Pollution Control Facilities.		252	126
Total Adjustments.			$7,439
Adjusted Net Book Cost			$33,052
Working Capital			
Cash			$ -
Materials and Supplies			651
Fuel			289
Total Working Capital			$ 940
Deductions			
Accumulated Deferred Income Taxes	1,426	1,678	1,552
Accumulated Investment Tax Credits	312	1,413	862
Customer Advances for Construction	4	5	5
ProForma Adjustments for Big Stone and Pollution Control Facilities			
Deferred Income Taxes		145	72
Investment Tax Credits		122	61
Total Deductions			2,552
Total Electric Rate Base			31,440

32. The Commission finds that an average rate base is appropriate in this proceeding. As explained by witness Hess, a rate base which reelects average investment in plant in service achieves a more proper matching of operating income with the investment that produced that income during a given test year period. Proper ratemaking requires that the test year revenues and expenses realistically reflect expected performance during the test year.

33. MDU argued that the use of an average rate base denies a utility the opportunity to recover its full revenue requirement because such a rate base "generates less than the allowed rate of return" (Opening Brief, p. 43). However, the Commission accepts the demonstration by fir. Hess in exhibits GEM-2 through GFH-4 that the full revenue requirement is earned under an average rate base. In addition, the Commission concurs in Hess' statement that adjustment of the test year for known changes in investment, revenues and expenses prevents any penalty to the utility (Tr. 596).

34. MDU's suggestion of using a year-end rate base and adjusting revenues and expenses to year-end levels in order to avoid mismatching of operating income and rate base is rejected because such approach is necessarily speculative and fixes upon conditions as of a single date which might not be representative of longer term relationships. An example of the weakness of the Company's annualization adjustments is the fact that no adjustment was made for the large commercial general service class, despite the fact that substantial load growth for this class occurred between 1974 and 1975 (Hess Dir., p. 10). Obviously, the approach chosen by the Company was incomplete. The problems associated with these incomplete and speculative adjustments are avoided by adoption of an average rate base. Permit immediate recovery of financing costs from current ratepayers, AFUDC offers the advantage o. matching the recovery of these costs from those ratepayers who actually use the new plant investment. MDU claims a 7% AFUDC rate in this proceeding, while

suggesting that the future rate may be higher. So long as this rate remains below the allowed rate or return, it seems obvious that AFUDC is a more economical means of financing construction than is CWIP.

35. The Applicant's estimates of revenues and expenses for the test year under consideration depicted the Big Stone plant and new pollution control facilities added to MDU's other steam generating stations during 1975 and 1976 as being in service during the entire test year. Therefore, the beginning of the test year balance must be adjusted to reflect these assumptions.

36. Witness Hess conceded on cross-examination that he had unintentionally failed to accept certain amounts of Construction Work In Progress (CWIP) in service, which amounts had been contained in MDU's exhibits H-4 and H-5 (Tr. 608-11). Accordingly, the Commission has increased the amount in the category CWIP in service from $56,000 to $74,000.

36. Witness Hess conceded on cross-examination that he had unintentionally failed to accept certain amounts of Construction Work In Progress (CWIP) in service, which amounts had been contained in MDU's exhibits H-4 and H-5 (Tr. 608-11). Accordingly, the Commission has increased the amount in the category CWIP in service from $56,000 to $74,000.

37. The Applicant's proposed electric rate base included certain amounts of CWIP of which some is non-revenue producing. All non-revenue producing additions have been deleted from the Applicant's proposed rate base as these figures reflect CWIP which is not in service and not used and useful for the benefit of the public. The Applicant also proposed to include a portion of its continuing long-term CWIP in rate base and cease capitalizing the Allowance For Funds Used During Construction (AFUDC) on such plant. Again, such CWIP is not used and useful in rendering service to present customers and has, therefore, been deleted.

38. The record contains a recurring dispute between Company

witnesses and those of the MCC and staff as co whether or not CWIP or the presently used AFUDC method best compensates the Company for the cost of financing construction. While CWIP would permit immediate recovery of financing costs from current ratepayers, AFUDC offers the advantage of matching the recovery of these costs from those ratepayers who actually use the new plant investment. MDU claims a 7% AFUDC rate in this proceeding while suggesting that the future rate may be higher. So long as this rate remains below the allowed rate of return, it seem obvious that AFUDC is more economical means of financing construction than CWIP.

39. The Company argues, and the Commission readily acknowledges, that CWIP is a means of improving current cash flow. As Dr. Wilson demonstrated in Exhibit S-8, MDU's internal generation of cash is sufficient to see the Company, through its projected construction program. In view of the sufficiency of cash flows, MDU has failed to show a need for CWIP in rate base.

40. Witness Hess did include in rate base certain non-income producing CWIP related to the Applicant's pollution control facilities and a small amount of additional cost estimated to be necessary to complete the Big Stone plant. These adjustments are accepted. These amounts were shown in Consumer Counsel's Exhibit GFH-1, Schedule 3, and are as follows:

Book Cost Adjustments for

Big Stone Plant and Pollution Control Facilities

(000)

	Electric Utility	Allocated to Montana	
		Percent	Amount
	(A)	(B)	(C)
Big Stone Plant			
CWIP at 12-31-75	$ 105		
Additional Cost to Complete	47		
Adjustment to 12-31-75 Plant	152	29.99	$ 46
closed to Plant in 1975	32,668		
Adjustment to 12-31-74 Plant	32,820	29.99	9,843
Pollution Control Facilities			
CWIP at 12-31-75			
Heskett	$ 316		
Lewis & Clark	605		
Beulah	1,232		
Additional Cost to Complete			
Heskett	590		
Lewis & Clark	566		
Beulah	721		
Adjustment to 12-31-75 Plant	4,030	29.99	1,209
Closed to Plant in 1975			
Heskett	6,268		
Lewis & Clark	3,557		
Adjustment to 12-31-74 Plant	13,855	29.99	4,155

41. Applicant adjusted 1975 expenses to reflect the assumption that the Big Stone Plant and pollution control facilities had been in service for a full year, and restated depreciation expenses to include a full year's depreciation on such facilities. This adjustment to depreciation expenses necessitates a corresponding adjustment to the depreciation reserve at the end of the year to reflect the additional depreciation that would have accumulated if the Big Stone Plant and pollution control facilities had been in service during the entire year. The adjustment to the 1975 test year depreciation reserve is shown in lines 8 and 9 of the table' in

Finding No. 31.

42. Applicant sought to include compensating bank balances in its electric rate base. These balances are related to short-term borrowings which are used primarily for financing CWIP and therefore are not a cost properly paid by current ratepayers. Because these expenses are related to CWIP, they should be reflected in the AFUDC rate. For purposes of this proceeding, MDU has claimed a 7% AFUDC rate. The fact that compensating balances were not contained in that rate does not mandate a recomputation by the Commission. As Mr. Hess pointed out, the AFUDC rate and MDU's books of account should not be retroactively adjusted to reflect an amount MDU now believes would have been compensatory in 1975.

43. The Applicant sought to include certain amounts of customer-contributed capital in the rate base. All such capital must be excluded from the rate base because it is not the role of the ratepayer to advance portions of capital necessary to construct or maintain utility plant. The following customer-contributed capital has been excluded: accumulated deferred income taxes, accumulated deferred investment tax credits, and customer advances for construction. The deferred taxes arise as a result of the Applicant's normalization of the tax effects of accelerated amortization and liberalized depreciation. The tax credits likewise arise from MDU's normalization of its income tax charges to eliminate the effect of current investment tax credits and their amortization over the life of the property to which they relate. Exclusion of customer advances is consistent with the concept that there must be a matching of plant investment with the revenues which such investment might ordinarily be expected to generate. Even though refunds of advances are constantly being made, new advances replace them in what is a virtual revolving fund.

Revenues and Expenses

44. Applicant claimed pro forma 1975 test year operating revenues, before rate increase, of $10,746,000 (Exhibit J-1).
45. The proposed adjustment of $280,000 for the purpose of matching pro forma revenues (Exhibit J-6) with a year-end rate base is rejected. This rejection is necessary to assure that test year revenues are consistent with an average rate base.
46. The Commission finds pro forma test year operating revenues of $10,466,000.
47. Applicant initially claimed pro forma 1975 test year operating expenses of $8,839,000 (Exhibit J-1). In tin Ball's rebuttal testimony on behalf of the Company, however, it became clear that the pro forma purchased power expense had been understated by $171,000 (Ball Reb., p. 1). The adjustment required by the discovery of this understatement, after allocation to Montana operations, results in a $33,000 increase in claimed expenses.

Accordingly, Applicant claimed total test year electric operating revenues of $8,872,000.

48. Applicant made a series of adjustments in order to pre- "sent expenses at hypothetical year-end levels. Because the Commission has rejected a year-end rate base in favor of an average rate base, these adjustments are rejected.

49. Applicant priced a portion of the pro forma participation power sales from the Big Stone Plant at the old MAPP rate for capacity. However, the old MAPP rate and the revenues Applicant receives from its inter-system sales do not result in an adequate return on investment If these sales are not to be subsidized by Applicant's Montana ratepayers, an adjustment to intersystem sales to reflect the full revenue impact of these surplus sales is necessitated.

50. The inclusion of the Big Stone Plant in the adjusted

1975 test year has a substantial impact on the costs that must be borne by Montana retail customers, primarily because the Big Stone Plant represents approximately 30 percent of the electric rate base allocated to Montana customers in this proceeding. This cost burden on Montana customers is eased somewhat by the assumed sale of excess capacity to other utilities as participation power.

51. The Commission finds the new MAPP rates appropriate fox this proceeding, although even the new MAPP rates will not fully cover the cost of the excess capacity sold (Hess Dir., pp. 23-24). Using the higher new MAPP rates affords MDU ample opportunity for improved earnings in the immediate future. It was clearly demonstrated that as the load on MDU's system grows, an increasing amount of the output from Big Stone sold to other utilities as participation power will be withdrawn and sold to ultimate consumers (Tr. 276-278). At the new rates, the sale of participation power in the test year yields 1.49 cents per kwh. On the other hand, MDU's sales to ultimate consumers during 1975 yielded 2.78 cents per kwh. Consequently, as an increasing amount of the output is sold in the future to ultimate consumers at rates higher than the 1.49 cents per kwh for participation power, MDU's profit from the operation of the Big Stone Plant will increase.

52. The increase in intersystem sales revenues recommended by Hess results in an increase of $275,000 over Company figures.

53. Applicant included and thereby attempted to charge ratepayers for certain institutional and promotional advertising expenses. Upon written motion of the Consumer Counsel, this Commission determined that such expenses must be disallowed in compliance with 70-121.1, R.C.M. 1947 (Tr. 3). This adjustment results in disallowance of $7,000 of the Company's claimed expenses.

54. Applicant's proposed revision to book depreciation rates was based on year-end plant. Consistent with Finding No. 32, it is essential to modify Applicant's adjustment to reflect average

plant.

55. In order to obtain consistency between the allowed amount of taxes, other than income taxes, and the average rate base, an adjustment is required. Accordingly, the claimed taxes on property additions other than Big Stone pollution control facilities have been adjusted.

56. Deferred income taxes must be reduced to the level of deferrals that would have resulted if the straight line depreciation used as a basis for the deferral were a full year's depreciation calculated at the revised book depreciation rates.

57. Another adjustment to deferred income taxes is required to reflect the increase in deferred income taxes that would have resulted if the tax depreciation had reflected a full year's depreciation on the Big Stone Plant and pollution control facilities at Heskett and Lewis & Clark. This adjustment is necessary because the basic assumption made by all parties was that these facilities were in service for the full test year, whereas depreciation for only one-half year was included in the boo}; deferral.

58. Applicant took the position in this case that full normalization should be adopted for tax purposes. This treatment would have the effect of permitting the Company to retain the full benefit of all tax savings realized by use of accelerated depreciation, and would necessitate an increase of $330,000 in the pro forma expenses allowed by the Commission. The Commission finds, however, that a flow-through treatment, giving the immediate benefit of accelerated depreciation to ratepayers, is justified as there is no indication that MDU's present rate of expansion and plant replacement will change. With a constant rate of expansion, and continuous replacement of existing plant, new depreciation allowances should replace old ones at an even pace. As Mr. Hess pointed out, any assumption as to a reasonable future growth rate indicates that "income taxes paid in the future will never exceed the income taxes that would be paid if

straightline depreciation had been used for tax purposes" Hess Dir., p. 29).

59. Consistent with the average rate base approach adopted in Finding No. 31, it is necessary to adjust current income taxes to annualize interest expense.

60. It is uncontroverted that there are substantial variations in overhead deductions from year to year and that these variations are caused by fluctuations in construction activity. The Consumer Counsel proposal to adjust capitalized pensions and taxes deducted in the income tax calculation to the average of the last three years is appropriate in this proceeding because the resultant figure is representative of a normal test year and develops a representative tax deduction for the test year. The adjustment is calculated as follows:

Adjustment to Normalize Capitalized Overheads
(000)

	Capitalized Pensions and Taxes
1. 1975	$ 438
2. 1974	378
3. 1973	124
4. Total	$ 940
5. Average	313
6. 1975	438
7. Adjustment	$ (125)
8. Income Tax Effect	$ 64
9. Allocated to Montana	
10. Percent[1]	25.86%
11. Amount	$ 17

[1]Based on capitalized overheads allocated to Montana (Exhibit J-2, p. 3)

61. Applicant's operating revenue figures failed to include the pre-1974 pro'-it which it realized upon the reacquisition o~ its debt at a discount. Nor was this amount taken into account by other witnesses in MDU's computations of the cost of debt. Witness Hess contended that an adjustment to revenues should be made to recognize this profit (Hess, Dir., p. 33), and the Commission finds that electric operating revenues must be increased by $16,000 to reflect this adjustment.

62. Staff contended that an adjustment to Applicant's fuel expense was required to prevent the payment of excessive coal prices to an MDU affiliate. MDU obtains all of its coal from Knife River, a wholly-owned subsidiary. Staff would hold the return on equity realized by Knife River on its sales to its parent to the same return allowed in this proceeding. Although there is some evidence that Knife River's earnings are excessive, the Commission cannot conclude on the basis of the record before it that MDU's payments for its coal supplies are artificially high. This issue of dealings with affiliates is, however, a crucial one, and the potential for abuse warrants a high degree of regulatory attention. The Commission will continue to monitor this situation in order to determine if a special proceeding directed specifically at the MDU-Knife River situation is required.

63. The following table summarizes the Commission's findings as to electric utility revenues, expenses and rate of return earned at present rates:

MDU - Electric

(000's)

	Pro-Forma Before Additional Revenue Requirement	Adjustments	Adjusted 1975 Test Year
	Exh. #1		
Operating Revenues	10,746	(280)[1]	10,466
Expenses			
Fuel & Purchased Power (Net)	2,290	(347)[2]	1,943
Operation & Maintenance	2,952	(7)[3]	2,945
Total	5,242		4,888
Depreciation	1,651	(40)[4]	1,611
Taxes Other Than Income Taxes	827	(15)[5]	812
Federal & State Income Taxes			
Current	(297)	(54)[6]	(351)
Provision For Deferred Taxes	309	88[7]	397
Provision For Investment Tax Credit	1,154		1,154
Amortization of Investment Tax Credit	(14)		(14)
Total	8,872		8,497
Operating Income			1,969
Amortization of Pre-1974 Profit Debt Reacquired At a Discount			16[8]
Total Available For Return			1,985
Electric Utility Rate Base			31,440[9]
Pro-Forma Rate of Return Earned Before Rate Increase			6.31%

1. Finding No.45
2. Findings 48, 52
3. Findings No. 53
4. Finding No. 54
5. Finding No. 55
6. Findings 57, 59, 60
7. Findings 56, 57, 58
8. Findings No. 61
9. Finding No. 31

Revenue Requirement

64. The Commission finds that the additional revenue required in MDU's electric operation is $1,522,000. This amount is computed as follows:

Electric Utility

(000's)

Electric Utility Rate Base	$31,440	
Recommended Rate of Return	8,66%	
Recommended Return		$2,723
Amount Available for Return		1,985
Income Deficiency		738
Revenue Deficiency		1,522[1]

[1] This amount recognizes an income tax obligation of 51.51% for rate making purposes however, actual accumulated deferred income taxes have been deducted from rate base in Findings 31 & 43.

Part D

NATURAL GAS UTILITY

RATE BASE

65. The Commission finds the following natural gas utility rate base:

Gas Utility Rate Base Allocated to Montana
1975 Test Year
(000)

	Allocated to Montana		
	12-31-74 (A)	12-31-75 (B)	Average (C)
1. Net Book Cost of Plant in Service			$ 29,164
2. Gas Storage Underground-Noncurrent	$ 5,300	$ 4,107	4,704
3. Construction Work in Progress in Service	n/a	187	187
4. Advance Payments for Gas	597	629	611
5. Working Capital			
6. Cash			
7. Gas Stored Underground-Current	1,386	1,912	1,649
8. Materials and Supplies			1,003
9. Total Working Capital			2,652
10. Deductions			
11. Accumulated Deferred Income Taxes	1,618	2,121	1,870
12. Accumulated Investment Tax Credits	351	406	378
13. Customer Advances for Construction	31	49	40
14. Total Deductions			2,288
15. Total Gas Utility Rate Base			$ 35,030

66. An average rate base has been used for applicant's natural gas utility for the reasons stated in Findings 32 and 33.

67. CWIP has been eliminated from tile gas utility rate base for the reasons stated in Finding No. 37.

68. As in his treatment of electric utility plant (Finding No. 36), Mr. Hess acknowledged that he had failed to include in his exhibit certain amounts of CWIP actually in service. The amounts he missed are contained on Exhibit I-5, and consist of $31,564, and the Commission finds that Applicant has natural gas CWIP in service of approximately $187,000. (Tr. 610)

69. Compensating balances have been deleted from the gas rate base for the reasons stated in Finding No. 40.

70. Accumulated deferred income taxes, unamortized investment tax credits, and customer advances in aid of construction have been deducted from rate base for the reasons stated in Finding No. 43,

Revenues and Expenses

71. Applicant claimed pro forma 1975 test year operating revenues, before rate increase, of $18,102,000 (Exh. K-1).

72. Consistent with the average rate base found appropriate in Finding No. 65, all of the Applicant's adjustments which attempt to restate revenues and expenses to year-end levels have been excluded and replaced with adjustments consistent with average rate base.

73. Applicant's industrial gas curtailment estimate was based on an assumed 21.4% curtailment of gas classified in priority category No. 4 in the curtailment plan originally submitted to the F.P.C. by Applicant in the spring of 1976. This plan was modified on October 18, 1976. In addition, some of the industrial customers applied for and were granted exemption from curtailment as provided by Section 2.6 of the General Terms and Conditions of Applicant's F.P.C. Gas Tariff, First Revised Volume No. 1. For these reasons, Applicant's estimate of industrial gas curtailments requires adjustment.

74. Applicant's adjustments to increase cost of purchase gas reflect both an assumed increase in the price of gas as well as an assumed increase in the amount of gas purchased. Witness Hess (Dir. 35-36) accepted Applicant's estimated increase in the average unit price of gas by state, but in determining the pro forma cost of gas he applied those unit costs to the actual 1975 purchases by state. This approach is consistent with both "test year" and "used and useful" concepts which have been discussed and approved previously.

75. Mr. Hess advocated several additional adjustments to MDU's calculation of its purchased gas costs. One adjustment was required to determine a normalized market following rejection of the year-end usage levels. The second adjustment was necessitated by the adjustment to restate industrial sales under the curtailment plan as accepted in Finding No. 69. Both of these adjustments are determined appropriate.

76. Applicant included and thereby attempted to charge rate-payers certain institutional and promotional advertising expenses. These expenses are disallowed because they do not comply with 70-121.1, R.C.M. 1947.

77. MDU sought to include as an operating expense $65,000 for the amortization of certain advance payments which proved unsuccessful Mr. Hess rejected this expense, pointing out that MDU had failed to comply with FPC guidelines when it entered this venture Mr. Hess' rejection met with approval in Order No. 4245A.

78. The Commission has decided that the Webb-Helis amortization should be permitted in view of the growing natural gas shortage. Any regulatory practice which might reduce the incentive to explore for new gas must be examined and re-evaluated.

79. Applicant's revised depreciation rates must reflect average rather than year-end plant.

80. Consistent with Findings 59 and 60, natural gas operating expenses must reflect an annualized interest expense and normalized capitalized overheads.

MDU - Gas

(000's)

	Pro-Forma Before Additional Revenue Requirement	Adjustments	Adjusted 1975 Test Year
	Exh. K-1		
Operating Revenues	18,102	211[1]	18,313
Operating Expenses			
Operation & Maintenance Gas cost	5,930	(99)[2]	5,831
other	5,615	(17)[3]	5,598
Total	11,545	(116)	11,429
Depreciation	1,402	(35)[4]	1,367
Taxes Other Than Income Taxes	1,121	(40)[5]	1,081
Federal & State Income Taxes			
Current	924	221[6]	1,145
Provision For Deferred Taxes	536	(100)[7]	436
Provision For Investment Tax Credit	176		176
Amortization of Investment Tax Credit	(22)		(22)
Total	15,682	(70)	15,612
Utility Operating Income	2,420	281	2,701
Amortization of Pre-1974 Profit Debt Reacquired At a Discount			14
Total Available For Return			2,715
Gas Utility Rate Base			35,030[8]
Pro-Forma Rate of Return Earned Before Rate Increase			7.75%

1. Findings No.73 and 75
2. Findings 74 and 75
3. Findings No. 76
4. Finding No. 79
5. Finding No. 72
6. Findings 58 and 80
7. Findings 58 and 80
8. Finding No. 65

81. The following table summarizes the Commission's findings as to natural gas utility revenues, expenses and rate of return earned at present rates:

Revenue Requirement

82. The Commission finds that the additional revenue required in Applicant's natural gas operation is $687,000. This amount is computed as follows:

Natural Gas Utility

(000' s)

Gas Utility Rate Base	$35,030	
Recommended Rate of Return	8.66%	
Recommended Return		$3,034
Amount Available for Return		2,715
Income Deficiency		$ 319
Revenue Deficiency		$ 658[1]

[1] This amount recognizes an income tax obligation of 51.51% for rate making purposes; however, actual accumulated deferred income taxes have been deducted from rate base in Findings 65 and 70.

Part E

RATE STRUCTURE

Electric Utility--Cost of Service

83. MDU's Proposed electric rate schedules were developed by Gamble utilized a cost of service study its witness Gamble. Mr. Gamble utilized a cost of service study prepared by Mr. Chick of Stone & Webster to allocate the Company's claimed revenue requirement to MDU's various classes of customers, with some modifications. These revenue requirements were, essentially, the result of functionalization and allocation on a demand responsibility basis, using average embedded costs.

84. Staff presented a comprehensive approach to electric utility

rate structure which featured certain marginal cost principles. The rationale behind marginal cost pricing is that electric rates must be set so as to reflect the cost of producing an additional unit of service. In this may, the consumer is made to feel the true cost which his consumption imposes on the utility and on society. Rather than enjoying the benefit of some artificially low price, based on average historical cost, the consumer is forced to recognize the full impact of his electrical usage.

85. Staff's witness Mr. Miller developed a functionalized power supply element of the cost of service based on marginal cost principles. The marginal running costs were assigned to the energy component and the marginal capacity costs were assigned to the demand component of the power supply in the cost of service. This functionalized power supply cost was substituted for the embedded power supply cost component utilized by Stone and Webster.

86. Staff witness Mr. Galligan utilized the functionalized cost of service developed by Mr. Miller and the class load and allocation factors of Mr. Chick to determine the revenue responsibility of the various customer classes.

87. The Commission does not consider the allocations of cost of service and class revenue responsibility used by either the Staff or the Company to be optimal. As Mr. Miller clearly points out, "The basic problem is the complete absence of any detailed load study data for the MDU system. Lacking this data, it is impossible to make an accurate determination of the revenues that would be obtained by application of time varying rates to the several customer classes (Dir., p. 31).

88. The Commission, despite these continuing concerns, finds that the class revenue requirements proposed by Staff witness Galligan should be adopted. The Staff proposal combines the marginal cost functionalization of Mr. Miller with the class allocation factors of MDU and represents the best approach in the record in this case. The Commission concurs with Mr. Miller that

"This reassignment of some of the costs of power product-
tion from the demand component calculated on an average embedded basis to the energy component is a proper reflection of the economic factors that cause electric utilities to incur costs to provide electric service (emphasis added) (Dir., p. 33)."

89. The Commission expects completion of the load study mandated in Orders 4245 and 4245A. The Commission further orders the Company to submit the recognized alternative methods for al location of demand-related costs, such as the Coincident, Non-coincident, Average and Excess Demand, and marginal Cost methods in future rate filings before the Commission. The Commission, without an appropriate analysis of the recognized alternatives, cannot accept Mr. Chick's method that provides "all production and transmission plant was allocated on a demand basis and that no functional plant was allocated on an energy basis (Chick Dir., p.18

Electric Utility-Residential Class

90. Gamble proposed that all of MDU's present residential rate schedules should be consolidated into a single schedule, which would consist of a $4.00 per month minimum charge and four blocks with declining charges as energy usage increased.

91. MDU presently sells most of its electricity to residential customers under Schedule 10-M-7. This schedule has three declining blocks. Acceptance of Mr. Gamble's proposal, therefore, would actually increase the number of blocks in the most commonly used schedule. The Commission finds that this approach is undes-irable, and is not supported by evidence that MDU's cost of de-livering service declines as a customer's usage increases.

92. Mr. Galligan recommended substantial revision of the rate structure within the residential class. He accepted MDU's proposed $4. 00 minimum charge, concluding that this substantial increase was in line with the magnitude of customer costs, and

allowed these costs to be recovered in the non-usage component of the rate structure. Mr. Galligan then proposed a two block structure, although suggesting that the Commission might wish to consider a third block to minimize the impact of these revisions on electric space heating customers. Galligan's proposed blocks would break at 250 kwh per month, with the second block applying on all sales in excess of that amount.

93. The Commission accepts the two block electric rate structure for the residential class as recommended by Staff witness Galligan. The combination of marginal cost pricing and progressive utility rate structures, which recognize actual cost elements are essential in the face of escalating energy, costs and shortages. Mr. Galligan describes the rationale for flattening the residential rate structure as follows:

"Firstly, the Company has performed no cost of service study to indicate that increased residential consumption is correlated with off peak usage and the costs of that off peak usage. Secondly, the average cost study performed by the Company was done by class, not usage levels within a class. There is simply no evidence of record that increased demand is oriented toward off peak periods, or that increased kwh per KW is correlated with total usage. Absent a clear showing that increased usage is correlated with lower costs associated with that usage I conclude there is no cost justification for the declining block structure proposed by MDU (Dir., p. 9)."

94. The Commission considers the second block as a measure to dampen the impact of the flattened structure for high usage residential consumers and therefore does not adopt a third block to the same end. As the electric space heating load grows, new capacity will be added at dramatically increased costs. Accordingly, the interests of all rate payers are best served by insuring that large volume users feel the effect of their consumption.

95. Staff also recommended that the Commission consider ordering MDU to revise its billing form in order to better inform customers of the price they are paying at varying levels of usage. Under the present form, the customer has only enough

information to enable him to compute the average price of the energy he uses. MDU estimated that the cost of adopting staff's proposed billing form would be approximately four cents per bill.

96. Staff's proposed billing form is rejected, however, as there was no evidence that the benefits to be realistically expected from use of this form would outweigh the increased costs. The Commission finds that a bill insert which provides tile Consumer with the rate structure and technique for calculating the bill would accomplish the same goal at substantially less cost.

Electric Utility--General Service

97. In proposing an approach to general service rates, staff determined the peak and off-peak usage periods on the MDU system. Mr. Miller then proceeded to a determination of the manner in which MDU's costs varied between peak and off-peak periods. Utilizing Mr. Miller's efforts, tin Galligan calculated a time of use rate for the general service class.

98. The Commission finds that staff's proposal for time of use rates for the general service class should be adopted. This approach will help to match prices with actual supply costs, and should, by communicating this information to customers, help to minimize the need for future plant construction. The voluntary time of use offering approved herein shall be based upon staff's rate calculations, shall be made available to those customers with appropriate metering capabilities, as well as those customers willing to purchase necessary meters. While the revenue impact of this voluntary offering cannot be predicted with certainty, the Commission finds that the potential benefits of this offering outweigh any associated risks. The Company will have the opportunity to monitor revenue and consumption levels closely. Since the program is voluntary, the number of customers taking service under the new offering and altering their consumption patterns should appear gradually.

99. For those general service customers not opting for time of use rates, MDU's proposed general service schedule (Schedule 20-M-6) is accepted, as reduced to reflect the revenue requirement determined herein.

Natural Gas

100. MDU's proposed flat rate structure for natural gas customers is accepted.

CONCLUSIONS OF LAW

1. The original cost depreciated rate bases determined in Findings 31 and 65 comply with the requirement of R.C.M. 1947, Sec. 70-106, that the valuation of utility property for ratemaking purposes not exceed the original cost of the property.

2. Use of an average-year rate base is proper in order to match test year revenues and expenses with the plant that produced them. Absent a showing of some compelling reason why this matching principle should be foregone, the average-year approach should be utilized.

3. All long-term, non-income producing construction work in progress has been excluded from the rate base in compliance with the "actually used and useful" requirement of Section 70-106.

4. Compensating bank balances, rather than being a rate base item, should be reflected in the AFUDC capitalization rate.

5. The adjustment to revenue from sales for resale discussed in Findings 49 through 52 is appropriate because MDU went ahead with its participation in the Big Stone Plant knowing that its system would be in an excess capacity situation at the time this

plant came on line. This adjustment has the effect of distributing these capacity costs between shareholders and ratepayers. As discussed above, the impact of the adjustment will be minimized as retail sales begin to demand this excess capacity.

6. Advertising expenses which do not comply with the requirements of R.C.M. 1947, Section 70-121.1, have been disallowed.

7. The rate of return allowed in this order meets the constitutional requirements that a utility's return 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).

8. The rate levels and rate structures approved herein are just, reasonable and non-discriminatory.

9. MDU's proposed fuel and purchased gas adjustment clauses are rejected as their approval would violate the terms of R.C.M. 1947, Sec. 70-113.

ORDER

NOW THEREFORE, THE MONTANA PUBLIC SERVICE COMMISSION ORDERS that:

1. All motions and objections not ruled upon at the hearing are denied or overruled

2. MDU is granted revenue increases of $1.522.000 for electric service and of $658,000 ·or natural gas service. The increased rates shall be effective for the first full billing period after August 20, 1977.

3. MDU shall file rate schedules to recover the approved revenue increase in accordance with the class revenue allocations of staff witness Mr. Galligan.

4. The residential rate structure filed by MDU should con-

form to that proposed by Mr. Galligan which includes a minimum charge of-$4.00 per month per customer and a two block structure.

5. The general service offering filed by MDU shall include the voluntary time-of-use rate structure proposed by Mr. Galligan as well as a general service schedule (20-M-6) for customers not opting for time-of-use rates, reduced to reflect the revenue requirement approved herein.

6. MDU shall complete and submit the load study mandated by Orders 4245 and 4245A in future rate filings. MDU shall further submit alternative methods for functionalizing and allocating "demand-related" costs.

DONE IN OPEN SESSION on August 11, 1977, by a vote of 5-0.

BY ORDER OF THE MONTANA PUBLIC SERVICE COMMISSION.

GORDON E. BOLLINGER, Chairman

P.J. GILFEATHER, Commissioner

THOMAS J. SCHNEIDER, Commissioner

JAMES R. SHEA, Commissioner

GEORGE TURMAN, Commissioner

ATTEST:

Gail E. Behan
Secretary

(SEAL)

NOTICE: You are entitled to judicial review of this Order. Judicial review may be obtained by filing within thirty (30) days from the service of this Order a petition for review pursuant to Section 82-4216, R.C.M. 1947.