Service Date: April 21, 1982

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

IN THE MATTER of the Application by	) UTILITY DIVISION
THE MONTANA POWER COMPANY for	)
Authority to establish increased rates	)DOCKET NO. 80.4.2
for natural gas and electric service	)
in the State of Montana.	)ORDER NO. 4714d

INDEX

Page

APPEARANCES..... 1

FINDINGS OF FACT

Background.....2
Ratemaking Criteria.....4
Customer Classification 4
Cost of Service: Methodology.....6
Cost of Service: Revenue Responsibility.....10

Rate Design
Residential.....15
General Service.....21
Industrial.....23
Irrigation.....25
Lighting.....30

Other Issues
Interruptible Rates.....33
Load Management and Time-of-Day Rates.....35
PURPA.....38
CONCLUSIONS OF LAW.....42
ORDER.....42

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

* * * * *

IN THE MATTER of the Application by	) UTILITY DIVISION
THE MONTANA POWER COMPANY for	)
Authority to establish increased rates	) DOCKET NO. 80.4.2
for natural gas and electric service	) ORDER NO. 4714d
in the State of Montana.	)

APPEARANCES

FOR THE APPLICANT:
Dennis Lopach, Esq., Hjort and Lopach, P. O. Box 514, Helena, Montana 59624.

FOR THE MONTANA CONSUMER COUNSEL:
John C. Allen, Esq. and James Paine, Esq., Montana Consumer Counsel Staff Attorneys, 34 West Sixth Avenue, Helena, Montana 59620.

FOR THE INTERVENORS:

C.W. Leaphart, Esq. Leaphart Law Firm, 1 North Last Chance Gulch, Helena, Montana 59601, appearing on behalf of Champion International and Ideal Basic Industries.

James A. Robischon, Esq., Suite E, 1951 Harrison Avenue, Butte, Montana 59702-3765 and William L. O 'Quinn, Esq., 555 Seventeenth Street, Denver, Colorado 80217, appearing on behalf of the Anaconda Company.

Anne MacIntyre, Esq., District 11 Human Resource Council, 207 East Main, Missoula, Montana 59801 and Terry A. Wallace, Esq., 119 Mount Street, Missoula, Montana 59801, appearing on behalf of District 11 Human Resource Council.

Capt. Jefferson N. Schaffner, Esq., Malmstrom Air Force Base, Great Falls, Montana 59401, appearing on behalf of Malmstrom Air Force Base.

John Doubek, Esq., Small, Hatch & Doubek, 314 Fuller Avenue, Helena, Montana 59620, appearing on behalf of Montana

Irrigators, Inc.

Phyllis A. Bock, Esq., Montana Legal Services Assoc ., 301 Steamboat Block, Helena Montana 59601. appearing on behalf of Montana=s Power to the People.

FOR THE COMMISSION:
Eileen E. Shore, Staff Attorney and Presiding Officer
Brenda Nordlund, Staff Attorney

BEFORE:
GORDON E. BOLLINGER, Chairman
JOHN B. DRISCOLL, Commissioner
HOWARD L. ELLIS, Commissioner
CLYDE JARVIS, Commissioner
THOMAS J. SCHNEIDER, Commissioner

FINDINGS OF FACT
Background

1. On April 8, 1980, the Montana Power Company (MPC, the Company or Applicant) filed with the Commission an application for authority to increase rates and charges for electric and natural gas utility service. The filing was assigned Docket No. 80.4.2 and on May 13, 1980 was bifurcated into Phase I -- revenue requirement ---and Phase II -- electric rate-design.

2. On December 19, 1980 the Commission issued Order No. 4714a establishing the Company's-authorized revenue requirement reflecting annual electric utility revenue increases of $22,754,000 and annual gas utility revenue increases of $28,627,000.

3. On November 6, 1980 the Commission issued a procedural order establishing Phase II dates for discovery, testimony and hearing.

4. Intervenor status in Phase II was granted the following parties: the Montana Consumer Counsel (MCC), District XI Human Resource Council (HRC), Anaconda Company (Anaconda), Champion International Corporation and Ideal Basic Industries (Champion), and the United States Air Force (Malmstrom Air Force Base or MAFB).

5. The Phase II hearing was noticed on June 3, 1981 to commence on June 30, 1981.

6. On June 15, 1981 the Commission granted intervenor status to the Montana Irrigators, Inc. (Irrigators), and on June 16th cancelled the hearing previously set for June 30th.

7. On October 6, 1981 a Notice of Public Hearing was issued and on November 3, 1981, pursuant to the notice, a hearing was commenced in the Federal District Courtroom, Federal Building, 301 South Park Avenue, Helena, Montana, and continued thereafter until concluded on November 7,1981. Satellite hearings were held for the convenience of the public on November 3, 1981 at 7: 00 p . m. in the auditorium of the Social and Rehabilitation Services Building in Helena, on November 4, 1981 at 7:30 p.m. in the Twin Bridges Grade School in Twin Bridges and on November 10, 1981 at 7:00 p.m. in the district courtroom of the Federal Building in Billings.

8. The objectives of this proceeding were to a) examine MPC's rate design and b) to consider ratemaking standards set forth by PURPA. The examination of MPC's rate design encompasses the goals of PURPA which have been long-standinq ratemaking objectives of the Commission prior to passage of the Act. These goals are: a) the promotion of energy conservation, b) efficient management of energy resources, and c) equitable

rates for consumers of electric service in Montana. The Commission's explicit consideration and determination of the appropriateness of implementing the PURPA ratemaking standards is provided in a latter portion of this Order. Following, are the Commission's findings with respect to MPC's rate design, including cost of service, rate spread and structure, and other rate design considerations Ratemaking Criteria

9. Testimony by all parties to the proceeding contain at least some reference to the proper role of costs in the ratemaking process. At issue was the appropriateness of the PURPA Sec. 111 Cost of Service ratemaking standard and the need to temper class revenue responsibilities resulting from the various cost of service proposals. Although the record indicates (see especially Haffey Exh. 2 and Power, Tr. p. 957) that all parties agree that cost of service is the proper beginning point to the ratemaking process, conflicting recommendations regarding the appropriateness of the PURPA standard requires the Commission to set forth the following finding.

10. The Commission wishes to make clear that in its attempts to arrive at just and reasonable ratemaking decisions, it is regularly required to consider a myriad of criteria -- not simply costs alone. However, it is the case that the Commission finds that costs "to the maximum extent practicable" is the proper approach to pricing. The Commission's decision regarding the appropriateness of the PURPA Cost of Service standard (see Finding No. 109) reflects this finding.

Customer Classification

11. The Company (Haffey, Exh. 1) proposes several changes to the existing customer class structure: 1) elimination of the Optional All Electric Church class and serving those customers on the General Service Schedule, 2) establishing a uniform Special Contract rate applicable to all nine of the large industrial customers, and 3) while maintaining the current Government and Municipal class' serving the Malmstrom Air Force Base at the General Service rate and serving the U.S. Minuteman Missile Sites at a unique "U.S. Minuteman Missile Site" (Haffey, Exh. 1, JDH-2) rate.

12. The Commission finds merit in a single "Industrial" rate applicable to all large transmission level customers and the elimination of the church schedule. Both of the proposals are uncontested and represent a major step in the elimination of preferential rates.

13. The Commission finds less merit, however, in the Company's proposed treatment of the Government and Municipal classification. The Company correctly maintains that the appropriateness of the General Service rate applied to the MAFB load is an uncontested result of the Phase I proceeding (Order No. 4714a, as confirmed by the Commission on March 12, 1982). Although the Commission remains unconvinced by the testimony of MAFB (Lewis, Exh. A) that the air base is in any way entitled to preferential rates, it finds that the Company is in error in applying the General Service rate to the MAFB load. MAFB is a transmission level customer with a test year peak demand of 6816 kw and an annual test year load factor of 62.9 percent. These characteristics clearly correlate with the Industrial class (transmission level with peak demands and load factors as low as 5274 kw and 58.6 percent), not the General Service class (only primary and secondary customers) The primary determinant of the cost variation in serving

Industrial versus General Service loads is service voltage level. The Commission finds no reason why MAFB should be subjected to the distribution demand costs or energy line losses associated with primary and secondary service.

14. Mr. Haffey further testified (Tr . p . 296) on November 4, 1981 that the Company was in the process of examining the missile sites for proper classification. The Commission finds that the Company has had sufficient opportunity to properly classify the missile sites. The missile sites are served at the primary and secondary levels corresponding with the General Service classification and, therefore, should be priced at the General Service level.

15. The Company is directed to eliminate the Government and Municipal classification. MAFB is to become an Industrial customer served at the Industrial rate and the U.S. Minuteman Missile Sites are to become General Service customers served at the General Service rate.

Cost of Service: Methodology

16. The single most contested issue before the Commission in Phase II of Docket No . 80.4.2 is cost of service methodology. At issue is whether the Company's rates should be structured 'based on embedded costs (the Company, Anaconda, Champion and Irrigators) or marginal costs (MCC and HRC)

17. The primary argument in support of embedded costs revolve around- the relationship between costing and the revenue requirement. Whereas the marginal costs require a reconciliation of revenue, the embedded approach results in a "clean" allocation of the revenue pie where the sum of the

slices precisely equals the size of the pie. Marginal costing, alternatively results in a "messy" allocation requiring an application of, in this case, the "rule of ignorance" (Power, Exh. D) -- an equiproportional reconciliation where each class contributes an equal percent of its class marginal revenue responsibility. The embedded proponents argue that this reconciliation diminishes the potential effectiveness of marginal costing to the point that the embedded approach is preferred.
(See especially: Cuiller Exh. 1, JAG-10, Freymiller Exh. 1, FMF-8, Haffey Tr. p . 301, Saleba, Tr. pp. 451 and 556, and Yankel, Tr. p. 1050).

18. The proponents of marginal costing argue that the pricing resource utilization principles of economic theory make marginal costing the preferred approach. (See especially Power Exh. D, pp. 73-76 and Wilson Exh. C, pp. 30-42). Probably the most descriptive explanation of the benefits associated with marginal costing came in the Consumer Counsel's cross-examination of the Company's illustrative witness, Mr. Ambrose:

Q. Would you explain briefly why that (marginal costing) is your conclusion?

A. Briefly? I think it can be succinctly stated giving a reference to all of the testimony we had from the Irrigation Class we had yesterday as probably the best case in point. The pricing signals that we're giving people and the decisions they're making to consume electricity are wrong based on average historic costs; I think there was vivid proof of that in the several Irrigators who indicated that if they had been told what electricity would cost four years later, they never would have bought the sprinkler system to begin with.
What we did was encourage them to make uneconomic choices in resource utilization. We should not allow that to exist. And there, to my mind, doesn't exist a sufficient set of roadblocks or other practical or impractical reasons why we should not go ahead and begin to price on a marginal basis in

order to send the kind of signals that need to be sent so that five years from now we don't have another large group, let us say space-heating customers, in here making the same-complaint that irrigation customers have made the past day. My primary reason for wanting it, without getting into the economic theory, is the beneficial effect it would have on the total revenue requirements that consumers are required to pay in Montana for electric service. (Tr. pp. 349-350)

19. The irrigation situation, having been a focal point in the proceeding, deserves elaboration. There are three facts on the record which lead to what Mr. Ambrose has aptly referred to as "the black hole" (Tr. p. 381): 1) the existing total average price charged for irrigation load is 2.4754/kwh (Order No . 4714a revenues divided by Statement H normalized test year kwh sales), 2) the irrigation total marginal cost is 15.33¢/kwh (Exh. 1, FMF-7 revenues divided by Statement H normalized sales), and 3) the 1980-1984 annual growth in irrigation sales is projected by the Company to be 18.25 percent (Exh. 7 p. L-35). The result is Alfred Kahn's "three horseman of the Apocalypse -- inflation, attrition and dilution."[1] - Test year 1980 would see revenue attrition of $1.9 million; 1981, $2.2 million; etc. The uneconomical growth spurred by failure to price at marginal cost leads to wasteful investments of scarce capital into additional plant, pancaked rate cases (the Company contemplates a May, 1982 filing), a soaring revenue requirement (Exh. 7 projects a real annual increase of 6 percent through 1990), revenue and rate instability, customer unacceptance, etc.

20. The Commission finds that it is time the Company and its customers begin the laborious climb out of the black hole. The proper prescription is marginal costing where the consumer-faces the economic cost consequences of consumption. All parties agree that cost causation should be the basis in ratemaking. The Commission fails to see any analytical correlation between the economic costs incurred to provide

service and the

---

[1] Kahn, Alfred E . 1982. "Balancing the objective to serve against the ability to finance. " Presented to Edison Electric Institute, Phoenix, January 14.

embedded accounting costs -- either on an individual customer basis or on a collective class basis.

21. The Company's arbitrary 75 percent reallocation of generation costs from demand to energy (certainly not "clean") is a clear indicator of the inability of the embedded approach to arrive at costs. The Weighted 12 CP embedded calculation sponsored by the Irrigators leaves even less to be desired. Among the anomalies of this unique (e. g. see Tr. pp. 1068-1070) method of costing is its purely coincident peak allocation of demand-related distribution plant which conveniently allocates none of those costs to the irrigation load (e. g. see Saleba, Supplemental Rebuttal, Oct. 21, 1981 , pp. 2-13). Finally, the dramatic variance in the "allocated" revenue responsibility between the two embedded cost studies illustrates the sensitivity of the embedded approach to allocation and classification parameters. It is deeply troubling that in Docket No. 6454 the Company presented a coincident peak method which allocated none of the "fixed capacity" costs to the irrigation class, yet in this case, based upon the same resources and construction plans, has presented a calculation resulting in a 338 percent increase to the irrigators.

22. The revenue reconciliation argument proffered by the opponents of marginal costing is valid. However, 1) they have not provided evidence suggesting that the embedded approach (i. e. equal rates of return on embedded costs) more accurately follows cost, or is more equitable, than the reconciled marginal approach, 2) with the embedded revenue requirement escalating at 6 percent annually the gap between the embedded and marginal revenues will quickly dissipate, and 3) absent a marginal cost study there is simply no cost

basis for establishing class and customer price signals.

Cost of Service: Revenue Responsibility

23. Including the Company's illustrative calculations, the Commission has been presented five cost of service alternatives in this proceeding. The Company -and the Irrigators proposed embedded calculations prepared by Messers Saleba and Yankel, respectively . The Commission, in adopting marginal costing, has chosen to focus instead on the three marginal calculations presented by the Consumer Counsel witness Dr. Wilson (Exh. C), HRC witness Dr. Power (Exh. D), and the Company's illustrative witnesses Messrs Ambrose and Freymiller (Exh. 1).

24. The three marginal cost of service calculations are similar in their treatment of generation costs. In all three cases a combustion turbine is used to indicate the demand component of marginal generation costs while the short run (variable) marginal energy costs are used to model the energy component. The studies differ primarily in their treatment of customer and distribution costs. The MCC calculation focuses on the marginal bulk power supply costs and adopts the distribution and customer calculations sponsored by Mr. Saleba. The Company's illustrative analysis calculates, in addition to marginal bulk power supply cost, marginal distribution and customer costs.
The HRC calculations modify the minimum distribution system customer demand allocation found in the Company's study.

25. Dr. Power argues that the concept of a minimum distribution system misallocates a truly demand-related cost to the residential class in the form of customer-related costs. Although the Commission finds merit in Dr. Power's

contention that the costs in question are truly demand-related, it remains unconvinced that the costs are not truly residential costs -- whether classified as customer or demand.

26. The Commission finds that the proper approach in arriving at class revenue responsibility is to direct the Company to follow through with its illustrative calculations sponsored by Mr. Freymiller while relying on the Consumer Counsel's analysis and suggested modifications to correct several deficiencies and to temper the resulting class revenue allocation.

27. The Company is directed to utilize the calculations of Mr. Ambrose and Mr. Freymiller, as modified to reflect the following adjustments.

28. MAFB and the U. S. Minuteman Missile Sites. For purposes of costing the Company is to reclassify the MAFB and missile site loads per Finding No. 15.

29. Ten Percent Irrigation Power Factor Adjustment. The commission finds persuasive the Consumer Counsel's arguments regarding the inappropriateness of Mr. Saleba's 10 percent sales adjustment. The Company is to use the Statement H normalized test year kwh sales energy billing determinants. To reduce power factor related costs, the Company is directed to install capacitors with direct assignment of the costs to the irrigation class in future rate proceedings.

30. Irrigation Seasonal Sales Adjustment. The Commission finds persuasive the Consumer Counsel's arguments regarding the apparent irrigation winter billing anomaly. To offset the apparent billing lag, the Company is to adjust forward by one

month the irrigation Statement H sales. This results in winter consumption of 3, 971,999 kwh as compared with the Statement H figure of 9,598,646 kwh.

31. Transmission Level Marginal Customer costs. Per me suggestions of Mr. Ambrose (Exh. 1, p. 30 of BJA-1), the Company is directed to include the transmission level marginal customer costs provided to staff in the Company's late filed exhibit (Steve Winter, January 22, 1982).

32. Unit Demand Cost Adjustment. Per the suggestions of Mr. Ambrose (Exh. 1, p. 31 of BJA-1), the Company is directed to adjust the seasonal unit demand cost by the seasonal class coincidence factors provided to the staff in the Company's late filed exhibit (Steve Cook, December 8, 1981).

33. Demand Billing Determinant Adjustments. The correct seasonal demand billing determinants remain obscure on the record (e. g., see the Company's supplemental rebuttal, Steve Winter, February 12, 1982, JDH-7). The Company -is directed to apply the correct seasonal demand billing determinants to the seasonal - unit demand costs in arriving at demand cost responsibility, consistent with the six month seasons found in the NERA cost study. Working papers supporting the calculation shall include source citation and verifications of the correct determinants.

34. Street, Post Top, and Yard Lighting Revenues. The one area where the calculations of the Company and the Consumer Counsel differ dramatically is in the costing of the lighting load. The anomaly is apparently a result of the treatment of the $2 million direct assignment. The record is not clear whether the Company's calculation includes or should include the marginal equivalent of the Consumer Counsel's direct

assignment costs. The Commission finds that the proper approach, given the lighting rate design discussion at Finding Nos. 82-89, is to freeze the lighting revenue requirements at their existing levels.

35. Irrigation Revenue Requirement. A major issue in Docket No. 80.4.2 was the Company's eye opening "proposal" to increase the irrigation revenue responsibility by 338 percent. The irrigation revenue requirement resulting from the cost of service calculation as outlined above is approximately a 125 percent increase (See Sch. 1). The Commission finds that the proper approach is an increase in revenue responsibility of one-half that amount -- or approximately 63 percent. This finding is based on the following factors:

1) The Consumer Counsel's calculations suggest a fully compensatory increase of 57 . 6 percent (Revised Exh., Robert Logan, November 25, 1981),

2) The questionable quality of the irrigation load data,

3) Sound ratemaking judgment regarding the potential impact on irrigation customers, and

4) the serious disparity between the existing revenues and compensatory revenues resulting from a uniform application of the costing method adopted by the Commission in this Order.

36. Schedules 1 through 4 provide illustrative calculations approximating the resulting unit marginal costs and class revenue requirements. The Company's final calculations will vary slightly reflecting such factors as employee discounts, classification of the MAFB and missile sites load,

verification. The Company's final calculations are to papers which shall include a summary of billing determinants, etc. be supported by detailed working providing, by class of service, 1) marginal unit costs, 2) seasonal billing determinants, 3) marginal revenue responsibility. and 4) resulting class revenue responsibility.

Schedule 1[a]
Class Revenue Requirement (103$)

	Existing Revenues	Marginal Revenues	Compensatory[b] Revenues	- %	Moderated[c] Revenues	- %
Residential	51,631	107,635	49,332	-4.5	49,824	-3.5
General Service	54,749	103,096	47,252	-13.7	47,723	-12.8
Industrial	20,448	60,576	27,764	+35.8	28,041	+37.1
Irrigation	1,976	9,723	4,456	+125.5	3,216	+62.8
Lighting	4,327		4.327	-O-	4,327	-O-
TOTAL	133,131	281,030	133,131		133,131	

Schedule 2[d]
Unit Marginal Costs (1980 $)

	Energy 4/kwh	Demand $/kw/mth.	Energy and Demand 4/kwh	Customer $/bill
Residential	3.33	-O-	5.51	9.75
General Service	3.16	5.74	4.91	11.15
Industrial	2.73	5.56	3.70	54.92
Irrigation	2.80	-O-	12.03	10.25

[a] Does not include Government and Municipal. Will vary slightly due to employee discount calculation, classification of the MAFB and missile sites, and verification of billing determinants.

[b] Reflects an equal (.4583) proportion of marginal revenues for each class, with the exception of Lighting.

[c] Reflects an equal (.4675) proportion of marginal revenues for each class, with the exception of Lighting and Irrigation.

[d] Reflects load weighted average of seasonality and voltage level per class

Schedule 3[e]

Reconciled Unit Marginal Costs

	Energy 4/kwh	Demand $/kw/mth	Energy and Demand 4/kwh	Customer $/bill
Residential	1.53	-0-	2.53	4.47
General Service	1.45	2.63	2.25	5.11
Industrial	1.25	2.55	1.70	25.17
Irrigation	1.28	-0-	5.51	4.70

Schedule 4[f]
Moderated Unit Marginal Costs

	Energy 4/kwh	Demand $/kw/mth	Energy and Demand 4/kwh	Customer $/bill
Residential	1.54	-0-	2.55	4.51
General Service	1.46	2.66	2.27	5.16
Industrial	1.26	2.58	1.71	25.42
Irrigation	.93	-0-	3.98	3.39

[e] Reflects an equiproportional (.4583) reconciliation of the marginal unit costs leading to compensatory revenues provided in Schedule 1.

[f] Reflects the unit costs leading to moderated revenues provided in Schedule 1.

Rate Design

37. Residential. Alternative residential rate designs were proposed by the Company (Haffey, Exh. 1), the Consumer Counsel (Logan, Exh. B as revised per Tr. p. 755), and HRC (Power, Exh. D). The Company proposed a fully compensatory customer charge with a flat energy rate structured to recover the energy and demand revenues. Dr. Logan's proposal is similar except that it features a minimum bill provision rather than a customer charge. The flat energy rate is then designed to recover customer as well as energy and demand

revenues. Both proposals feature seasonal differentials reflecting winter/summer energy and demand cost differentials.

38. Dr. Power's proposal features, in addition to a minimum bill, an inverted/lifeline energy component. The inverted/lifeline energy rate provides an initial block of 400 kwh in the winter and 250 kwh in the summer priced at 1.54/kwh less than the tail block.

39. A fully compensatory customer charge would generate about $10 million of revenue- (2.2 million bills at Sch. 4 costs of $4.51/bill). Dr. Logan would instead recover those revenues through the energy charge as a means for pricing energy and demand closer to its costs, yet within the constraints of the class revenue requirement.

40. Dr. Power's minimum bill and inverted/lifeline proposal is designed to accomplish a social equity objective as well as the pricing/resource utilization objective. His proposal is supported by his finding that the load characteristics of large versus small customers indicates a 1. 54/kwh cost differential. Commensurate with his finding thee the social equity provision of his lifeline proposal is a public good, Dr. Power proposes that the lifeline be supported by a reduction in residential class revenue responsibility (from Sch. 1 level) of an amount equal to 2 percent of the Company's total revenues -- or $2.7 million.

41. The Company argues that although the pricing resource utilization objective is a valid goal, it is a misconception to focus on the energy rate in that the customer's price signal is the total bill, not the energy rate (Lewis, Exh. 2). Furthermore, it is the Company's position that the social equity objective is not valid; it does not provide

sufficient justification for deviating from costs and is beyond the function of the Commission. (Cuillier Exh. 1 JAG-42).

42. The Commission rejects the Company's position in total. Should the consumer rationally decide to displace one unit of energy consumption with a less costly or more valuable substitute, the resulting change in the total bill is clearly a function of the energy rate. The energy rate is clearly the price signal which will determine the direction of the Company's travels through the black hole.

43. The Commission also finds peculiar the Company's position on social equity. The Company has maintained throughout the proceeding that it is not really proposing a 338 percent increase in irrigation rates and that it is the function of the Commission to determine 1) who is to subsidize the irrigators, 2) at what level should they be subsidized, and 3) for how long they are to be subsidized. (see e.g. Haffey Tr. p. 302).

44. Obvious at this point is some confusion on the part of the Company. If the Commission is to follow only costs, then why is the Company not really proposing a 338 percent irrigation increase or the elimination of employee discounts, a rate which reflects rural/urban cost differentials, etc? If social equity, or ability to pay, is beyond the function of the Commission, then the Commission would have no power to accept the Company proposal that the Commission not reflect fully compensatory irrigation rates.

45. The Commission finds persuasive the proposals of Drs. Logan and Power to recover residential class customer revenues via the energy charge. The minimum bill concept

provides a mechanism for pricing energy closer to its cost level and eliminates the declining average energy cost signal resulting from fixed monthly customer charges.

46. The Commission rejects Dr. Power's lifeline proposal. The Commission finds inappropriate the proposed deviation from class revenues provided in Schedule 1. The Commission, however, finds merit in the lifeline objective -- the provision of essential needs at an affordable cost, regardless of income (see PURPA Sec. 114) -- and has accomplished this goal through the minimum bill. The Commission's finding with respect to Sec. 114 of PURPA reflects this decision (see Finding No. 115).

47. The Commission finds persuasive, however, the evidence in support of an inverted residential energy rate. Dr . Power (Exh. E) sufficiently demonstrates that an inverted rate clearly follows the ratemaking Anaconda witness Mr. LaCapra criterion endorsed by all parties -- costs. further testified to the economic rationality in inverted rates:

Q. Based on your review of those studies (the Cost of Service Studies presented by the Montana Power Company), do you have an opinion as to whether-there's a cost justification for inverted rates in your Residential Class?

A. Yes. Based upon my review of the data, I believe there is a cost justification for inverted residential rates in Montana

Q. Could you elaborate on that to any degree?

A. Yes. I think there is here the balance between pure economics of the situation and some of the practical

concerns of cost, the costs that are not always easily identified. We have a class revenue target for the Residential Class. Much of Montana Power's data, especially their loads and resources, have indicated that this is a class which is growing at all times and is growing substantially more on-peak. This was a little difficult to get out in the hearings, but I don't think anyone here doubts that.

Now, one of the objectives of a rate is future stability, and in this case, an inverted rate or, in other words, meeting the Residential Class's revenue target by an inverted rate would be in my opinion more stable, more equitable, and more reflective of some of the cost considerations that I think are appropriate.

(Tr. pp. 1039, 1040)

48. Mr. Yankel (the Irrigators) joins the endorsement:

Q. How does a customer with existing electric space-heat load make an economic decision about conservation, given a grand fathering situation in which it is only the new customers who are facing "these marginal signals"?

A. Okay, I believe the signals can be given to those customers as well. As I understand it, one of the proposals in the Northwest Power Bill or the negotiations that are taking place around that would be to try to set a level of conservation, goal of conservation, all the way down to the various customer levels. I advocate that strongly.

Price, say, a given customer at, say, what his average cost of electricity is, but his last usage priced at the margin so that therefore if he did increase a little bit, he would go up basically the marginal rate; decreased a little bit, his rate would go down with the marginal rates. (Tr. p. 1084)

49. Even the Company policy witness Mr. Haffey provides a quasi endorsement of inverted rates:

Q . ... Would you agree that when production costs are

declining, a declining-block structure is an appropriate structure to convey the cost information and recover those costs?

A. Is appropriate?
Q. Yes.

A. I would agree that it would be one appropriate structure.

Q. And that it is in fact an economically rational structure.

A. I would think it would be a reasonable rate structure.

Q. So, conversely, if real production costs are in fact increasing, would it be rational to continue that declining block structure?

A. Not necessarily.

Q. Would it be rational to invert the structure, Mr. Haffey?

A. If the customer receiving the price was going to receive the price solely through looking at one block or could understand the price through looking at the blocks in the rate and if the costs to the utility were increasing, energy costs and demand costs, it is conceivable that price, that kind of a structure that you described, would most appropriately indicate to the customer the costs of delivering electricity.
(Tr. pp. 293, 294)

50. Although the Commission finds the evidence persuasive, it also finds merit in gradualism. The Commission finds, for purposes of moderating the customer impact, that the minimum bill in combination with a significant seasonal differential provides an adequate first step in arriving at a proper price signal. The Commission wishes to make clear, however, that the proper pricing prescription clearly entails a movement to inverted rates in the near future.

51. The Commission directs the Company to file a residential tariff reflecting a minimum bill of $2.64 -- the existing customer charge. The tariff shall also reflect a flat energy

charge with a 20 percent seasonal differential. The 20 percent level represents a noncompensatory (Exh. 1, BJA-1, Sch. 2 and 15 indicate compensatory differentials of 36 percent for energy and 50 percent for demand) differential, but which will provide a price signal indicative of the Company's costs and is consistent with the proposal of Dr. Logan.

52. Schedule 5 provides an illustrative approximation of the resulting residential schedule. It will vary with the final revenue calculations and (downward) with the inclusion of the minimum bill revenues.

Schedule 5

Resulting Residential Rate Design

	Winter Oct.-Mar.	Summer Apr.-Sept.
Minimum Bill ($/mth)	$2.64	$2.64
Energy (4/kwh)	3.4374	2.8644

53. The resulting rate design results in only moderate increases to the large user. Schedule 5 indicates that winter consumption of 5,000 kwh would lead to a monthly bill of $171.85 -- a 16 percent increase over that ($147.90) resulting from the existing tariff.

54. Lastly, the Commission directs the Company to provide the tariffed rate on the customer's monthly bill. The focus of these Phase II proceedings has been costs and the proper price signal that reflects the costs.
The Commission finds that the customer must be regularly informed of the price signal and the logical forum for that transmittal of information is the monthly bill

55. General Service. The existing General Service rate

schedule features a minimum bill of $1.90; a seven declining block energy rate varying from 9.5 to 1.24/kwh; and, in addition to the initial 10 kw at no charge, two declining demand blocks.

56. Both the Company (Haffey, Exh. 1) and the Consumer Counsel (Logan, Exh. B) propose a restructured General Service rate reflecting a fully compensatory customer charge ($9 .78 and $9 .68, respectively) with seasonally differentiated, flat energy and demand rates.

57. The Commission finds the proposed revisions appropriate, with the exception of the customer charge. In light of the existing tariff which reflects a minimum bill and the resource utilization objectives which are equally applicable to the General Service class of customers (e. g. see Saleba, Phase I Direct, p. 15), the Commission finds that the appropriate General Service schedule shall feature a minimum bill of $5.11 (from Schedule 4). The customer revenues of $1.8 million (360,000 bills at $5.11) shall be recovered through the flat energy rate.

58. The schedule shall also feature a flat demand charge with a fully compensatory 50 percent seasonal differential. The energy rate is to be structured, as proposed, so that the 0-10 kw demand revenues are recovered through a 0-5000 kwh energy additive. The energy rate shall also feature the same 20 percent seasonal differential found in the residential tariff .

59. Schedule 6 provides an illustrative approximation of the resulting General Service rate design. Again, the final tariff will reflect the final revenue calculation and inclusion of minimum bill revenues which will revise the

energy rates slightly downward.

Schedule 6

Resulting General Service Rate Design

	Winter Oct. -Mar	Summer Apr. -Sept
Minimum Bill ($/mth)	$5.11	$5.11
Demand ($/kw)		
0-10 kw	$-0	$-0
>10 kw	$3.165	$2.110
Energy (4/kwh)		
0-5000 kwh	2.2504	1.8754
>5000 kwh -	1.6874	1.4064

60. Industrial. The existing tariff provides a " Schedule of Electric Contract Rates" which lists the Company's nine large industrial customers and the individual rates applicable to each customer. The Company has gradually collapsed the individual rates to the point that the schedule features only four different rates. In this proceeding the Company (Haffey, Exh. 1) and the Consumer Counsel (Logan, Exh. B) are proposing a single uniform rate schedule applicable to all large industrial customers.

61. The existing rates feature a negotiated minimum bill, energy rates varying from .3 to 2.14/kwh (flat and two, and three, declining blocks), and demand rates varying from $59/kw per year (roughly $5/kw/month) to $2/kw per month (flat and two declining blocks).

62. Both the Company and the Consumer Counsel propose a restructured rate schedule featuring a fully compensatory customer charge ($45.45 and $46.19, respectively) with seasonally differentiated, flat energy and demand rates. In addition to a negotiated minimum bill, the Company is also

proposing a minimum demand charge equivalent to 5,000 kw per month.

63. With the exception of the Company's proposed minimum bill, the Commission finds the proposals appropriate. The test year billing 'demands of the nine industrial customers vary from 4,974 kw (Kaiser) to 128,623 kw (Anaconda). This suggests that a minimum 5,000 kw take or pay is both inequitable and inefficient.[2]

64. If one is to presume that the proposed 5000 kw minimum taxes at least partially for purposes of providing an availability (to the' Industrial rate) constraint, then there may be an element of merit in the proposal. However, the 5000 kw constraint could merely be stated- in the tariff as a condition to availability, not in a demand take or pay provision; although it is not clear that even that is appropriate. The costing methodology adopted in this Order indicates that the characteristics of the Industrial class are (in their order of significance): 1) transmission level of service, 2) a relatively 'high seasonal coincidence, and 3) a relatively high load factor with seasonal parity. The Company's' revised tariff should include availability language reflecting this finding.

65. The Commission finds that the Industrial rate scheduled should include a minimum bill of, rather than 5,000 kw, one-third of the contracted demand. A minimum bill of one-third of the contracted demand will allow plenty of room for efficient consumptive decisions at the margin, is equitable in that it treats all customers equally and provides a modest level of protection to the ratepayers from the possible burden of generating revenues to

---

2

For example, if Kaiser were to increase its demand to 4975 kw the Company (Society) sees no additional revenues, but suffers $29.22 (Exh. 1, BJA-1, Sch. 14) in costs.

recover the embedded costs incurred to provide dedicated facilities to industrial customers which have abandoned the system.

66. The tariff shall also feature a compensatory customer charge of $25.42 (commensurate with Schedule 4), a flat energy rate reflecting the 20 percent seasonal differential, and a flat demand rate featuring a 50 percent differential. Schedule 7 provides an illustrative approximation of the resulting Industrial rate design.

Schedule 7
Resulting Industrial Rate Design

	Winter Oct. -Mar.	Summer Apr. - Sept.
Customer Charge ($/mth)	$25.42	$25.42
Energy (4/kwh)	1.384	1.154
Demand	$3.10	$2.06

Minimum Bill: l/3 of contracted demand per month.

67. Irrigation. If there is any one area that the cost/pricing effort has suffered from abuse in the form of lack of attention, it is definitely in the area of irrigation. The irrigation contribution to the black hole (see Finding No. 19) is certainly no mystery when:

1) the record indicates that few people, if any, have the ability to compute a monthly bill under the existing irrigation tariff, let alone comprehend the price or costs of energy;

2) no one apparently knows when the irrigators consume energy or when and how the Company bills for energy (e.g. the Statement H Actual kwh sales in February is a negative 8.2 million kwh); and

3) the Company maintains there is total absence of billing frequency data (which makes one wonder how they have been computing test year revenues).

68. Apparently the only irrigation billing data recorded by

the Company are reflected in the Statement H workpapers, which have been found to require arbitrary modifications (see Finding No. 30). This has lead the Company (Haffey, Exh. 1) and the Irrigators (Yanker, Exh. P) to propose to maintain the existing promotional tariff structure which features a minimum seasonal bill of $12 .33 per horsepower billed and a seasonal, eight block energy rate which apparently is an inverse function of an implied load factor. In the alternative, the irrigator is offered an alternate rate which is the existing General Service rate described in Finding No. 55.

69. The Consumer Counsel (Logan, Exh. B) proposes to restructure the tariff to reflect a monthly customer charge with a flat energy rate.

70. The Commission finds itself bound to the two proposals by the limited billing data. Moderation between the proposals, in the apparent absence of billing frequency data, is not possible.

71. Although the Commission finds the existing rate schedule totally unacceptable, and finds the flat energy rate proposed by Dr. Logan the proper approach, it is concerned about the possible double burden that the restructuring, in combination with the 63 percent additional revenue responsibility, presents.

72. The average irrigation consumption per bill rendered is 7,000 kwh (Statement H sales/11,300 bills). Assuming a 20 kw demand, at the existing alternate monthly rate, 7,000 kwh would lead to a monthly bill of $253.71, as compared to a $281.97 bill (11% increase) resulting from a flat energy rate structured to recover the 63 percent additional

revenues. - A monthly consumption of 20,000 kwh with 60 kw, at the existing alternate rate, would result in a monthly bill of $546.69, while the flat rate would generate a bill of $798.33 -- a 46 percent increase, but still less than the average 63 percent increase in revenues.

73. The billing comparisons suggest that the vast majority of irrigation monthly bills (at least those reflecting consumption less than three times the average) would be less under Dr. Logan's proposed flat energy rate than under the Company's and Irrigator's proposed rate structure. Apparently (without the aid of any billing frequency information, one is relegated to speculation), it is a handful of very large irrigation consumers who would be subjected to the double burden.

74. In light of this, the Commission finds that the proper approach is to grandfather the existing structure and place all new loads of both new and existing customers (i.e. new pumps) on the flat energy rate.

75. The existing structure is to be available only to the existing loads (i. e. existing pumps) of existing customers. The restructured rate shall also be made available to all existing customers. To the extent that existing customers choose to be served at the restructured rate and thus choose not to subsidize the handful of grand fathered users, the Company will be provided incentives to commence with proper billing procedures -- including the recording of bill frequencies -- and an analysis of the irrigation class.

76. The Commission directs the Company to prepare an analysis of the irrigation class. The analysis shall result in a proposed time frame for placing all irrigation load on

a fully compensatory rate featuring a flat energy charge. This will require an examination of projected prices, including the effects of Colstrip Units 3 and 4 and possible participation in a Pacific Northwest power exchange agreement, and detailed billing comparisons. The analysis is also to examine proper billing procedures. For example, the magnitude of the individual irrigation loads suggest that these customers should be demand metered with separate energy and demand charges. Demand metering would eliminate the use of nameplate horsepower as a proxy for demand which allegedly has led to excessive charges because of required oversizing of motors due to low voltage. Likewise, it is not clear whether the Company makes monthly meter readings, (a problem made obvious by the contested "winter irrigation" use) or what is the proper irrigation minimum bill. The analysis should address these questions in detail. And finally, the analysis is to be timely filed corresponding with proposed changes in tariffs, beginning with the next general electric rate case.

77. Schedule 8 provides an illustrative approximation of the restructured irrigation rate schedule available to all irrigation load. The customer charge reflects the cost provided in Schedule 4 and the energy rate is structured to recover both energy and demand revenues. Both reflect a 63 percent increase in class revenue responsibility. The schedule also features the same seasonal minimum featured in the existing rate ($12.33/horsepower) converted to a monthly minimum based on a six month season.

Schedule 8
Resulting Irrigation Rate Data

Customer Charge ($/mth)	$3.39
Energy (4/kwh)	3.974

Minimum bill ($/horsepower/mth)	$2.05

78. Lastly, the Commission wishes to respond to the Irrigator's request for future rate information. This Order provides an irrigation rate that is 1) explicitly subsidized by all other ratepayers and 2) reflects a promotional structure at a time when each additional unit of sales adversely effects all other ratepayers. The Commission intends to rectify both of these deficiencies in the future.[3] A third factor is the Company's revenue requirement. In addition to a contemplated filing in May of 1982. the Company is projection increases of 29 percent and 24 percent for 1984 and 1985, reflecting, in addition to inflation, respectively.

79. Assuming the irrigation subsidy is eliminated by spreading the deficiency over three years, the average cost of irrigation load (total class revenue requirement divided by test year sales) will escalate to 5.5814/kwh by 1985. When the effects Colstrip Units #3 and #4, of inflation and the Company's generating expansion are included, then the average rate escalates to 10.0404/kwh by 1985. Schedule 9 demonstrates these effects

---

[3] Note though, that rectifying the second deficiency will actually lower the irrigation rate to the vast majority

of irrigators, while increasing the rate to a handful of large users.

Schedule 9
The Effects of Compensatory Pricing, Inflation,
and Generation Expansion on Average Irrigation Rates
(Nominal dollars - 4/kwh)

	The Effect of a Transition to Compensatory Pricing	The Effect of Compensatory Pricing and Projected Increases in the Company's Revenue Requirement
Year	Average Rate	Average Rate
1981	2.475	2.475
1982	4.028	4.028
1983	4.545	5.318
1984	5.063	7.546
1985	5.581	10.040

80. It should be pointed out that Schedule 9 is conjecture. The assumed phase-in of compensatory rates is clearly an illustrative assumption on further evidentiary considerations. Also, the which will depend Company's irrigation load study and future costing efforts could alter the compensatory projection upward or downward, substantially. And finally, the Company's price projections depends on the level of inflation and the Commission's ratemaking treatment of their proposed increases in revenue requirement.

81. Lighting. The Company's electric tariffs include three separate lighting schedules: Street Lighting, Yard and Protective Lighting, and Post Top Lighting.

82. The existing and Company proposed (Haffey, Exh. 1) Street Lighting schedule features a flat charge per kw of

lamp rating per month. The schedule further provides for direct charges reflecting the Company's operation and maintenance services and the rental of facilities (e. g. poles, lamps, etc.)

83 . The Consumer Counsel (Logan, Exh. B) proposes a restructured Street Lighting schedule featuring a monthly customer charge and a flat seasonally differentiated energy rate designed to recover energy, demand, and the direct assignment revenues.

84. The existing and Company (Haffey, Exh. 1) proposed Post Top and Yard and Protective Lighting schedules feature a flat monthly charge per light which includes the recovery of facilities rent and maintenance. The Consumer Counsel's (Logan, Exh. B) proposal converts the revenue requirement of both Yard and Post Top Lighting differentiated energy charge.

85. Aside from the proposals described above, the record does not provide much guidance in establishing proper lighting schedules. The record (e.g. see Tr. pp. 149-194) does make clear, however, that the street lighting customers are not satisfied with the existing costing/pricing mechanism. The record indicates four areas where the lighting costing/pricing effort is found to be deficient:
1) the allocation of administrative and direct assignment costs to the lighting schedules (see Finding No. 34);
2) the amortization of plant and resulting endless stream of facilities charges, despite inefficient lighting districts dating back 50-years;
3) the fixed dusk to dawn, 4,000 hours of annual burn at a time when the consumer is willing to reduce predawn consumption; and

4) incandescent lighting at a time when maintenance is costly and high pressure sodium vapor (HPSV) results, in some cases, one-fourth the energy consumption.

86. Pending a resolution of the four factors listed above, the Commission finds that the proper approach is to maintain the existing lighting schedules at the existing revenue levels. The existing tariff, lack of data, and shallow examination of the lighting issues clearly reflects the danger of ignoring this customer class in rate design. It is a matter of embarrassment to the Commission, which is intent upon an early resolution of these issues.

87. An alternative to the direct assignment charges is flash-cut expensing of the plant where the customer purchases the plant with facilities charges reflecting only maintenance costs where applicable. Both of two possible solutions to the fixed annual burn problem require converting, at least, the energy charges into an energy rate. The energy charge could then be calculated based on actual burn, if metered, or a level of contracted burn depending on the customer's choice of lighting hours.
88. Lastly, is HPSV lighting. The potential benefits associated with HPSV lighting at least warrens further examination. The benefits appear to include reduced maintenance, as well as energy and demand savings.

89. The Commission finds that the record in Docket No . 80.4.2 does not provide a sufficient basis for establishing a restructured lighting tariff. The proper approach is to direct the Company to further examine the lighting costing/pricing mechanism and provide a resulting proposal in its next filing with respect to HPSV, the Company is encouraged to reference the HPSV transition program

implemented by Pacific Power and Light Company (PP&L) in September of 1979. The HPSV transition program resulted from PP&L's analysis which found substantial savings and has led PP&L to install only HPSV lights over the last two and one-half years.

Other Issues

90. Interruptible Rates. The record, to a limited extent, includes a discussion on the merits of interruptible rates.

91. The Company's position (Cuillier and Winter, Exh. 1) is that the offering of interruptible service is "the only form of Load Management that is cost-effective for the Company at this time. . . the Company will make every effort to develop and propose an Interruptible Rate Schedule before the end of 1981." (Exh. 1, JAG-29) Mr. Cuillier later revised the target date to "January or February" of 1982 (Tr. p. 613).

92. Anaconda testified that preliminary studies suggest that 7 percent of their demand load can be considered interruptible (Hercod, Exh. J, p. 3) and that the Commission should "order in these proceedings a procedure whereby the utility will accept and respond in a timely fashion to customer proposals for interruptible service" (La Capra, Tr. p. 1030).

93. Dr. Power expressed some concern as to the likelihood of interruptible savings:

Q. If we adopt interruptible rates will that have an effect
of increasing this excess-capacity problem?

A. I'm not saying there's an excess-capacity problem. The utility insists that they're short both in energy and capacity. And I don't want to get into an argument at this point over what the situation is. I would just

> emphasize my warnings--and I think the utility is aware of the problem--that an interruptible rate that saves very little energy I think immediately would be of limited benefit to the utility. If the interruptible customer comes back on and sort of speeds up the use of electricity to catch up, the gains will be limited. I'll just leave it at that. (Tr. p. 1013)

94. The Commission finds merit in the Company's efforts, Anaconda's analysis, and the warnings of Dr. Power. Two questions remain: 1) is the Company capacity constrained and/or will interruptibility displace energy demands and 2) is an "Interruptible Rate Schedule" feasible or will interruptible provisions require tailoring to reflect- the interruptibility and resulting savings, or avoided costs, associated with each specific load.

95. The Company's expansion plans include the consideration of several combustion turbines (CT's) to be sited as early as next year (e.g. see the 1982 Long Range Plan). It is not clear whether the need for the CT's hinge on the success of the Company's planned hydro additions to capacity, but it is clear that the need depends on the Company's projected loads.

96. Although the Commission fully realizes that the value of interruptibility will depend on site specific factors, it also finds merit in standard provisions which eliminate the opportunity for preferential rates.

97. The Commission finds that the proper approach is to direct the Company, in- its next filing, to propose an Interruptible Rate Schedule. Given the testimony of Mr. Cuillier, the timing does not appear to be unreasonable; conversely, the testimony of Anaconda and the Company's 1982 Long Range Plan suggest the timing is opportune.

98. Furthermore, the Commission finds that the value of interruptible capacity and/or energy savings clearly correlates with the concept of avoided cost per Docket No . 81.2.15 . The Company is to design an interruptible schedule which provides the necessary tailoring latitude (e. g . see Logan, Tr. p. 820) and which incorporates the avoided cost concepts which provide an existing mechanism for arriving at the value of avoided generation capacity and energy.

99. In its proposal, the Company is to examine and propose the proper pricing mechanism. One approach, for example, is an interruptible credit equivalent to the difference between the avoided capacity rate and the retail capacity rate.

100. The Company is also to examine, in its proposal, the proper availability language. For example, cost avoidance does not seem to apply to interruptibility associated with new loads, for they bring with them power requirements not yet planned for in the system. However, interruptibility should still be rewarded in a new customer by allowing it to displace system reserves to the extent feasible. This treatment of new interruptible loads would allow making the system reserves a saleable commodity.

101. Load Management and Time-of-Day Rates. The Company's filing in this Docket includes an economic analysis of potential load management techniques. (Winter, Exh. 1, 2 and 9). The findings suggest that, with the exception of interruptible rates, the existing load management techno-logies and the nature of the system costs indicate that load management is not, at this time, cost effective. The Company's findings (Freymiller, Exh.
1) with respect to time-of-day (TOD) rates comes to a similar conclusion.

102. The feasibility of load management and TOD pricing, similar to that of interruptibility, appears to primarily depend on 1) the degree to which the Company is capacity constrained and 2) the degree to which load management efforts and TOD pricing will enable the avoidance of energy costs .

103. Dr. Power testified that load management is not likely to produce substantial savings:

Q What do you think about the valuation of the utility with regard to benefits of load management in this particular docket?

A In my initial testimony, I indicated some questions I had about the analysis, but I had to conclude that on an energy system -- on an electric system that was energy short, especially on a system where that energy shortage in some sense was a dominant problem, it seemed unlikely to me that load management would yield substantial benefits, because load management rarely as a direct result saves kilowatt-hours. And to the extent that Montana Power is building new facilities to provide kilowatt-hours and as a happenstance from that will have capacity, load management might not solve -- might not save the utility a substantial amount of costs. That was my conclusion having read their analysis about why one type of load-management method or device after another with their numbers just simply didn't appear to make sense. (Tr. p. 1012)

104. The Consumer Counsel (Logan, Exh. B), however, expresses a more optimistic view:

Q. WHAT IS YOUR RECOMMENDATION FOR TIME-OF-DAY RATES ON THE MPC SYSTEM?

A. MPC is in an enviable position in that it can project with reasonable certainty that its costs will begin to vary by time-of-day in the near future. However, there is sufficient time for MPC to begin preparation.

Q. DO YOU HAVE SPECIFIC RECOMMENDATIONS FOR MPC?

A. Yes. I suggest that MPC focus on analyzing various metering and rate design combinations. For example, all energy time-of-use rates have been used successfully by the Los Angeles Department of Water and Power and all energy time-of-use meters are less expensive than meters that record Kw demand. I recommend that the Commission order MPC to conduct such a study and submit it to the Commission in a timely manner so that the Commission might participate in the decision as to what rate design and meters are appropriate for the MPC system.

Q. WHAT IS YOUR RECOMMENDATION REGARDING IMPLEMENTATION OF INTERRUPTIBLE RATES AND LOAD MANAGEMENT TECHNIQUES ON THE MPC SYSTEM?

A. I recommend the Commission order MPC to answer the question what loads will be served by the planned combustion turbines. Once the Company determines for what loads the turbines are being built, then MPC can design interruptible rates and load management techniques to displace these planned peaking units.

Q. WHAT IS THE BASIS OF YOUR RECOMMENDATION?

A. Unfortunately, the Company does not identify the loads it intends to serve with the peakers, but it is my experience that cost effective measures to conserve are abundant in the 100 to 200 mills per Kwh range. Since the turbines will cost at least 100 mills to own, operate and maintain, a proper matching of load studies and avoidable costs should produce cost effective interruptible rates and load management techniques.

Q. HOW MIGHT MPC CONDUCT SUCH A STUDY?

A. Using load data supplied by MPC, I have constructed Exhibit _ (R. L . -12) . The exhibit shows monthly load duration curves for the MPC system. My analysis of these curves shows that there are a limited number of hours per year in which combustion turbines would be useful to MPC. This is confirmed by MPC's PURPA 133 filing which states at page C-19 that MPC plans to operate these units for 350 to 875 hours per year. In my opinion, better analysis of the loads and load management techniques should be conducted before the ratepayers become committed to paying for those turbines. (Exh. B, pp. 6-9)

105. The Commission finds merit in the recommendations of

Dr. Logan. The Company's costing efforts, load forecasts, and expansion plans clearly indicate that the ability of the Company's hydro storage capability and exchange contracts to flatten the growing thermal load is rapidly diminishing.

106. The Commission directs the Company to actively monitor the cost effectiveness of TOD and various load management technologies. Per the suggestions of Dr. Logan, the monitoring is to be forward-looking. The Company is in the fortunate position of being able to actively prevent, rather than reactively rectify, a poor system cost situation.

107. The Company's efforts should directly correspond with its expansion plans. For example, should the Company decide to site a CT in 1983, then it should be prepared to demonstrate that the CT is the least costly source of capacity.

Public Utility Regulatorv Policies Act (PURPA)

108. Sections 111 and 114 of PURPA requires the Commission to explicitly judge the merits of implementing six "ratemaking standards" and lifeline rate structure.- This section of the Order presents the Commission's consideration and ensuing action with respect to PURPA, per se. The standards are provided below, as they appear in the Act.
SEC. 111. Consideration - and Determination Respecting Certain Ratemakinq Standards.

* * *

(1) COST OF SERVICE. -- Rates charged by any electric utility- for providing electric service to each class of electric consumers, shall be designed, to the maximum extent practicable, to reflect the costs of providing electric service to such class,...
(2) DECLINING BLOCK RATES. -- The energy component of a rate, or the amount attributable to the energy component in

a rate, charged by any electric utility for providing electric service during any period to any class of electric consumers may not decrease as kilowatt-hour consumption by such class increases during such period except to the extent that such utility demonstrates that the costs to such utility of providing electric service to such class, which costs are attributable to such energy component, decrease as such consumption increases during such period.

(3) TIME-OF -DAY RATES . - - The rates charged by any electric utility for providing electric service to each class of electric consumers shall be on a time-of day basis which reflects the costs of providing electric service to such class of electric consumers at different times of the day unless such rates are not cost-effective with respect to such class,...

(4) SEASONAL RATES. -- The rates charged by an electric utility for providing electric service to each class of electric consumers shall be on a seasonal basis which reflects the costs of providing service to such class of consumers at different seasons of the year to the extent that such costs vary seasonally for such utility .

(5) INTERRUPTIBLE RATES. -- Each - electric utility shall offer each industrial and commercial electric consumer an interruptible rate which reflects the cost of providing interruptible service to the class of which such consumer is a member.

(6) LOAD MANAGEMENT TECHNIQUES. -- Each electric utility shall offer to its electric consumers such load management techniques as the State regulatory authority...has determined will -

(A) be practicable and cost-effective, as determined under section 115(c),

(B) be reliable, and

(C) provide useful energy or capacity management advantages to the electric utility.

SEC. 114. LIFELINE RATES.

(a) LOWER RATES. -- No provision of this title prohibits a State regulatory authority (with respect to an electric utility for which it has ratemaking authority) or a nonregulated electric utility from fixing, approving, or allowing to go into effect a rate for essential needs (as defined by the State regulatory authority or by the nonregulated electric utility, as the case may be) of residential electric consumers which is lower than a rate under the standard referred to in section 111(d)(1).

(b) DETERMINATION. -- If any State regulated electric utility or nonregulated electric utility does not have a lower rate as described in subsection (a j in effect two years after the date of the enactment of this Act, the State regulatory authority having ratemaking authority with respect to such State regulated electric utility or the

nonregulated electric utility, as the case may be, shall determine, after an evidentiary hearing, whether such a rate should be implemented by such utility.

* * *

109. In this proceeding, the Commission has considered these rate design issues. Provided below are the Commission's findings in regard to each standard.

110. Cost of Service. All of the parties to the proceeding in this Docket promote the use of costs as a beginning point in the ratemaking effort. (See Finding Nos. 9 and 10.) The Commission accepts long-run marginal costs, differentiated by time, function and customer class, as a basis in developing rate structure. To the maximum extent practicable, the Commission had designed
Service standard is hereby adopted and implemented,- constrained by practicability in the form of other Commission ratemaking objectives.

111. Declining Block Rates. The Commission has both adopted and implemented the Declining Block Rates standard in that the energy component energy charges, as a result of this Order, will reflect nondeclining of recovery of energy costs. The declining irrigation schedule was grand fathered, eventually to be replaced by flat energy charges.

112. Time-of-Day Rates. All parties to the proceeding also support the cost-effective implementation of rates which vary by time-of-day. In the case that, to the satisfaction of the Commission, it is demonstrated that the implementation of time-of-day rates result in net social benefits, then the Commission intends to implement rates which vary by time-of-day. The long-run marginal costs

accepted by the Commission indicate an insignificant variation in energy costs by time-of-day. Therefore, the Commission finds no benefit in implementing time-of-day energy charges for the Company's electric service in Montana. However, the Company has been directed to actively monitor the effectiveness of time-of-day rates.

113. Seasonal Rates. The cost analyses provided in Docket No. 80.4.2 indicate a substantial seasonal divergence in energy (18% to 40%) and demand (20% to 50%) costs. The Commission, in establishing energy and demand charges with seasonal differentials reflecting relatively higher winter production costs hereby adopts and implements the Seasonal Rates Standard.

114. Interruptible Rates. The Commission finds merit in interruptible rates reflecting the incremental costs avoided in providing interruptible service and therefore, adopts the standard. The record in Docket No. 80.4.2 does not establish interruptible provisions. However, the Commission has directed the Company to establish interruptible rates in the next proceeding.

115. Load Management Techniques. Although all parties to the proceeding conditionally support Load Management Techniques, the record does not reveal any techniques which generate net social benefit. The Commission finds the standard meritorious and intends to continually monitor evidence identifying the level of cost-effectiveness associated with any such technique.

116. Lifeline Rates. Section 114(b) of PURPA requires the Commission to examine the merits of providing a block of electricity consumption representative of essential needs at

a price below cost. The Commission finds merit in the provision of essential needs at an affordable cost and therefore, has implemented lifeline rates in the establishment of a residential minimum bill provision as opposed to a fully compensatory customer charge. To the extent the Commission adopts inverted residential rates in subsequent cases, the results of adopting this standard may become more evident.

CONCLUSIONS OF LAW

1. The Applicant, Montana Power Company, is a "public utility" within the meaning of Montana law, Section 69-3-101, MCA.
2. The Commission properly exercises jurisdiction over the Applicant's rates and operations pursuant to Section 69-3-102 and 69-3-302, MCA.
3. Based upon its consideration of the evidence and testimony presented by both the Applicant and intervening parties concerning each of the Section 111 PURPA standards and the Section 114(a) lifeline standard; the Commission has adequately reviewed those standards in compliance with PURPA requirements.
4. Rates resulting from the rate structure outlined and adopted in the Findings of Fact are just and reasonable.

ORDER

1. MPC shall design rates to generate authorized revenues which are consistent with the Findings of Fact entered by the Commission in this Order.

2. In its next filing for rate relief, the Company is to respond to direction regarding analysis and resulting proposals with respect to a) irrigation, b) lighting and c)

interruptible rates.

3. In submitting tariffs in compliance with this Order, the Company shall also submit working papers revealing, in detail, the structuring of the rates. The tariffs are to be filed within ten working days.

Done and Dated this 19th day of April, 1982 by a vote of 4-1.

BY ORDER OF THE MONTANA PUBLIC SERVICE COMMISSION.

GORDON E. BOLLINGER, Chairman

JOHN B. DRISCOLL, Commissioner
(Voting with concurring opinion)

HOWARD L. ELLIS, Commissioner

CLYDE JARVIS, Commissioner
(Voting to Dissent)

THOMAS J. SCHNEIDER, Commissioner

ATTEST:

Madeline L. Cottrill
Secretary

(SEAL)

NOTE: You may be entitled to judicial review of the final decision in this matter. If no Motion for Reconsideration is filed, judicial review may be obtained by filing a petition for review within thirty (30) days from the service of this order. If a Motion for Reconsideration is filed, a Commission order is final for purpose of appeal upon the entry of a ruling on that motion, or upon the passage of ten (10) days following the filing of that motion. cf. the Montana Administrative Procedure Act, esp. Sec. 2-4-702, MCA; and Com mission Rules of Practice and Procedure, esp. 38.2.4806, ARM.

JOHN DRISCOLL
CONCURRING OPINION
DOCKET NO. 80.4.2

During the progressive narrowing of issues for this Order, this Commission has scrupulously tried to base its decisions on general rules of economics or ratemaking theory, or upon factual findings from the record. For this reason, I feel this Commission has properly exercised its enormous discretion, and has well served the many parties that will be affected. I, therefore, strongly concur with this Order. However, as we wind our way through these complex cases, it seems that the repeated need to apply general rules of economics, or mathematical formulae, breeds a habit that sometimes may not be appropriate to a question before us. I believe we resorted to the unwise use of habit in (1) the determination of the amount of subsidy to the Irrigator Class (Finding of Fact No. 35), and (2) identifying the sources of the compensating income to the utility (Finding of Fact No. 36). In the first case, we "split the difference" between the current Irrigation revenue levels and our established revenue requirement; in the second case, we spread the responsibility for payment of the subsidy to the Residential, General Service, and Industrial Classes in direct proportion to their percentage of the total nonirrigation lighting revenue responsibility. Nothing argues for either technique other than they are "arbitrary, " "impartial, " "apolitical, " and "mathematical. "
I would argue instead that this Commission should have used its the prudent understanding of the particulars in this case to better determine the amount of subsidy, and apportion its compensation. My alternative proposition would be as follows:
The increased revenue responsibility to Irrigators should be 35.8 percent, rather than 63 percent, because that amount is

not less than the next hardest hit group of customers (Industrial), because it is within the "rule of thumb" guidelines offered by expert testimony on the record (Ambrose), because it is a significant increase to a customer class that needs a firm signal of increasing prices, and because it is a more gradual increase to a customer class that is paying less through no fault of its own, at a time when testimony clearly indicates it will be extremely tough to pay additional charges. Admittedly, all of these reasons are judgmental, but my point here is that this particular decision requires more detailed consideration than just saying "split the difference."

In apportioning the compensating revenue responsibility, I would further argue for more discrete judgment based upon our knowledge of the particulars. For example, the Residential Class should be allowed its full revenue reduction (4. 5%), because everyone is in that class regardless of their additional use in other customer categories, because money spent for electricity in that class is not tax deductible as it is in other classes, and no other class should be allowed a greater revenue reduction until those deserving smaller percentages receive their full quota. The Industrial Class should receive only its full increased revenue requirement (35 . 8%), and not 1.3 percent more as called for by the mathematical formula, the 35.8 percent increase will be tough enough to absorb, without having to pay the additional amount to subsidize the Irrigation Class. Finally, the General Service Class should pay the entire subsidy for the Irrigators, because General Service will already be enjoying the greatest revenue decrease of all the classes (10.5%), and can afford the temporary burden of not having the last 2 percent of its rightful requirements' decrease.

I have purposely included these personal rationales that

were rejected by the Commission, even though they "look out of place" in our typical rate order. Perhaps they defeat themselves in the eyes of the reader, to the same degree that they are convincing to me. However, I believe they are typical of the considerations that the Commission should not be reluctant to incorporate into its deliberations on some kinds of questions and its orders.

To those who would criticize my arguments by saying that they are too "political," I would respond that they are indeed political, but appropriately so. The Commission takes great pains to avoid being considered political, especially in light of its elected nature. The danger is that we might avoid a political judgment, when one is truely required.

The criticism of "political decision making, " and our desire to avoid such criticism is undoubtedly founded on the recently debased connotations of "politics . " Against the mainstream, I continue to agree with Aristotle (Ethics and Politics), and find political decision making honorable and in response to a clear-cut need of society. Public policy decision making, which we do here at the Commission, of necessity often means political decision making. Public policy decision making is not a science; it is an Art. The data of human behavior that we deal with often cannot be reduced to uniformity, and, therefore, will often not be susceptible to mathematics.

This Commission's appreciation of Equity, an important fundamental ratemaking principle, must therefore be called upon more frequently. Equity is simply a method of restoring a balance of justice when general laws, theories, policies, or mathematical formulae, have proven unjust to some segment that doesn't "fit" the uniform rule.

John Driscoll, Commissioner

DISSENTING OPINION
by
Clyde T. Jarvis,
Public Service Commissioner

in
Montana Power Company
Docket No. 80.4.2, Phase II
Order No. 4714d

April 26, 1982

DISSENT

Docket No. 80.4.2, Phase II
Order No 4714d

In good conscience, I am forced to dissent from Order No. 4714d because of what I see as devastating effects precipitated by this order on Montana's number one industry: agriculture.

Sprinkler irrigation is far superior to flood irrigation as it uses less water; therefore, there is less run-off and the water is used more efficiently. This results in far less contamination of Montana's waters by run-offs of soil, pesticides and fertilizers. Irrigation is done during the summer months; thus, the electricity used is in off-peak load.

The 62.8% increase in irrigation rates possibly will force many farmers and ranchers to cease sprinkler operations. Those who can will revert to flood irrigation while many who have land not suitable for flood irrigation will return that land to dryland operations. This will result in lower crop yields, thus a lower gross state product for export. This will seriously affect Montana's total economic viability.

In my estimation, many farmers and ranchers may be forced to let their sprinkler systems be repossessed This undoubtedly would have serious repercussions on sprinkler sales and

service businesses. I foresee fewer sales of pesticides and fertilizers, seriously further depressing the total agri-business community.

In my opinion, the order is unconscionable and ridiculous as it will only further depress Montana's number one industry which is already struggling with returns which don't even meet the cost of production.

Agriculture, through lower than justified fair returns for what it produces, has for years been subsidizing our total economy. I fear this Order No. 4714d, although rendered when good intentions, will have catastrophic effects on the agribusiness community. Therefore, I must dissent.

CLYDE T. JARVIS, Commissioner