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Re filed Evidence
1992 Rate Hearing
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9/14-17

Possible goals or objectives of rate design include at least the following: meeting the annual revenue requirement, equity or fairness, economic efficiency, simplicity and understanding of the rate form, conservation of resources, stability, social goals, administrative ease, employment, and protection of the environment.

5 While the rate designer may not give weight to all of these objectives, indeed many
6 of them are conflicting, they have been espoused as goals of rate design in rate
7 proceedings and published articles. A further discussion of these objectives is
8 provided in Appendix B to my testimony.

9 Methodologies include cost analysis both embedded and marginal, along with
10 various methods of allocation useful in fully distributed cost studies, and market
11 studies useful in assessing value of service. Rate forms useful in rate design include
12 flat rates, declining block rates, inverted rates, Hopkinson and Wright demand rates,
13 and combinations thereof. These methodologies and rate forms are tools of rate
14 design that are useful in working toward one or more of the above objectives or
15 goals. As an example, any effort to achieve economic efficiency through rate design
16 would call for the use of marginal cost analysis or the use of allocation
17 methodologies in embedded cost of service studies that give weight to cost
18 behaviour. Emphasis on the goal of fairness, particularly if fairness is defined as
19 giving significant weight to allocated costs, may suggest one of the numerous
20 methods of capacity cost allocation. Thus, methods themselves are not right or
21 wrong per se. They are only proper or improper, measured in terms of how they aid
22 in attaining the desired objectives.

23 Q. What are the two principal types of cost analysis that are used as a basis for rate
24 design?

25 A. The two types of cost analysis are fully distributed or allocated cost of service and
26 long-run incremental cost analysis. The latter is generally advanced as a proxy for
27 marginal cost and is concerned with the added cost of serving the added load of the

1 various customer classes, usually over some planning cycle. Thus, it is primarily
2 concerned with future costs. The former is generally concerned with an attribution
3 of past costs to various customer classes or rate categories. To some extent, an
4 allocated cost analysis is also an indication of the effect of already experienced
5 pricing policies.

6 Q. What is the usefulness of an allocated or embedded cost of service study?

7 A. An allocated cost of service study apportions the revenue requirement, among the
8 various rate classifications in accordance with a predetermined methodology. Since
9 there is no single "correct" manner of making such an allocation, the result will
10 reflect a number of judgments.

11 The translation of cost to pricing requires a knowledge of and the use of other
12 factors. These factors include an appreciation of the relationship between supply
13 and demand, relative growth of consumption, and the elements which determine
14 demand such as the availability and price of alternatives.

15 Q. What part should cost analysis play in the pricing of electric rates?

16 A. Pricing should be based upon judgment constrained by facts. Under certain
17 circumstances, particularly idealized textbook problems, sufficient facts may be
18 known so that only limited judgment may be necessary. In the complex real world
19 allocated cost analysis cannot provide a unique answer. Where the precise
20 relationship between price and demand may be unknown or differs over time, and
21 where the price and technology of input factors is changing, the use of judgment is
22 unavoidable. Hence, an allocated cost study should be more of a guide than a
23 prescription in setting rates for service.

24 Q. Do the changes to the various rates, which have been proposed in this proceeding,
25 reflect a consideration of these various objectives?

1 A. Yes, I believe that the changes represent a reasonable balancing of the various
2 objectives.

3 Q. You implied earlier that the allocation methodology used in an embedded cost of
4 service study can be used to further both the goal of fairness and the goal of
5 economic efficiency. Will you explain further what you meant?

6 A. Yes. The allocation of costs, particularly capacity related cost, using methods that
7 track cost behaviour can be regarded as supportive of the goal of economic
8 efficiency. The use of methods that track use of the facilities are generally more
9 supportive of the goal of fairness. As an example, if it is accepted that the
10 investment in a transmission line is primarily a function of peak hour requirements,
11 then it is possible that the use of the peak responsibility method to allocate costs
12 will best reflect cost behaviour. The peak responsibility method assigns cost to each
13 rate class based upon the relative percentage of total load contributed by each rate
14 class on the single peak hour. If a particular customer class makes substantial use
15 of the system at other times, but is almost non-existent on the peak day it will be
16 allocated virtually no cost. This is frequently regarded as unfair, and is known as
17 the free rider problem. An allocation methodology that gives predominant weight
18 to use, such as the average demand method, may give too much weight to off-peak
19 loads. Use of an allocation methodology that gives predominant weight to peak
20 periods, but which also recognizes the impact of loads on the peak hour of the year,
21 may be interpreted as giving balanced weight to the objectives of economic
22 efficiency and fairness. Use of such a methodology allows the use of a reasoned
23 basis for assigning costs to off-peak periods and thereby obviates the need to
24 arbitrarily adjust the results of a method that gives predominant weight to cost
25 behaviour.

26 The foregoing was not meant to imply that the use of peak responsibility will always
27 favor cost behaviour. While peak loads may be determinative of the total amount
28 of capacity to be installed, the mix of various forms of capacity each having its own