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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

Massachusetts Electric Company	DPU 200

TESTIMONY OF PAUL CHERNICK FOR THE ATTORNEY GENERAL ON THE RATE DESIGN OF MASSACHUSETTS ELECTRIC COMPANY

June 16, 1980

TESTIMONY OF PAUL CHERNICK

Q: Mr. Chernick, would you please state your name, position, and office address.

A: My name is Paul Chernick. I am employed by the Attorney General as a Utility Rate Analyst. My office is at One Ashburton Place, 19th Floor, Boston, Massachusetts, 02108.

Q: Please describe briefly your professional education and experience.

A: I received an S.B. degree from the Massachusetts Institute of Technology in June, 1974 from the Civil Engineering Department, and a S.M. degree from the same school in February, 1978 in Technology and Policy. I have been elected to membership in the civil engineering honorary society Chi Epsilon, to membership in the engineering honorary society Tau Beta Pi, and to associate membership in the research honorary society Sigma Xi. I am the author of Optimal Pricing for Peak Loads and Joint Production: Theory and Applications to Diverse Conditions, Report 77-1, Technology and Policy Program, Massachusetts Institute of Technology. During my graduate education, I was the teaching assistant for courses in systems analysis. I have served as a consultant to the National Consumer Law Center for two projects: teaching part of a short course in rate design and time-of-use rates, and assisting in preparation for an electric time-of-use design case.

Q: Have you testified previously as an expert witness?

A: Yes. I have testified jointly with Susan Geller before the Massachusetts Energy Facilities Siting Council and the Massachusetts Department of Public Utilities in the joint proceeding concerning Boston Edison's forecast, docketed by the E.F.S.C. as 78-12 and by the D.P.U. as 19494, Phase I. I have also testified jointly with Susan Geller in Phase II of D.P.U. 19494, concerning the forecasts of nine New England utilities and NEPOOL, and jointly with Susan Finger in Phase II of D.P.U. 19494, concerning Boston Edison's relationship to NEPOOL. I also testified before the E.F.S.C. in proceedings 78-17 and 78-33, on the 1978 forecasts of Northeast Utilities and Eastern Utilities Associates, respectively. In addition, I testified jointly with Susan Geller before the Atomic Safety and Licensing Board in Boston Edison Co., et. al., Pilgrim Nuclear Generating Station, Unit No. 2, Docket No. 50-471 concerning the "need for power". I recently testified in D.P.U. 20055 regarding the 1979 forecasts of EUA and Fitchburg Gas and Electric, the cost of power from the Seabrook nuclear plant, and alternatives to Seabrook purchases and in D.P.U. 20248 regarding the cost of Seabrook power. I have also submitted prefiled joint testimony with Ms. Geller in the Boston Edison time-of-use rate design case, D.P.U. 19845, but we have not yet testified.

Q: Are MECO's rate design proposals in this filing consistent with the professed objective of NEESPLAN?

A: No. In fact, MECO's proposed rate design is inconsistent with the professed goals of NEESPLAN. It will do little to promote either conservation or useful load management. Specifically:

1. Declining block rate structure is extensively retained, despite the instructions of DPU 18810 that such rates be eliminated. In some cases, the declining blocks are steeper in the proposed rates than under the current rates.

2. Special promotional rates for space heating remain open for new business.

3. Several rates appear to prohibit alternative energy development.

4. In rates G-22 and H, which have demand charges, the entire rate increase is placed on the demand charges; this will have little impact on energy use, and an uncertain effect on peak system demand.

5. The retention of 80% demand ratchets discourages load control in months other than the customers peak month.

Q: Has MECO eliminated declining blocks from any rates?

A: Yes. Proposed rate A-22 has a flat energy charge for regular use and another flat rate for off-peak use. The design of this rate appears to be a major step in the right direction. I have some reservations regarding the exact relationships between the regular, peak, off-peak, and farm use. But the complexity of the issues and the small size of the farm sales justify deferral of further refinements

until DPU 19846, the MECO time-of-use case. Certainly, the proposed rate A-22 is a useful step in the transition from archaic declining block rates to future rationalized rate design.

Q: Why is elimination of declining block rates beneficial?

A: Under declining block rates, large customers face a lower marginal rate than small users (the marginal rate is the rate paid for a few more KWHs or saved by using a few less KWHs) . Thus, the people with the greatest opportunity to conserve have the least incentive to do so. Under flat rates, the costs are distributed more evenly into the marginal consumption of the larger customers.

The existing A-22 rate, for example, applies the highest price only to consumption under 50 KWH. Since most bills this small are probably due to vacations, erroneous estimates, and the like, the vast majority of customers will find that this block is intra-marginal (not near their marginal consumption) and beyond their control.

In addition, the flat rate brings the price of using more power closer to the cost of producing more power. The marginal fuel costs in New England last spring were running about 2.5¢/KWH off peak and 3.5¢/KWH on peak (See Appendix 1, Chernick and Geller, 1979). Oil costs have risen 50% since then for #6 oil, and 70% for

#2 oil, indicating that marginal costs are more like 3.75¢ off-peak and 5.5¢ on-peak at this point. Including the marginal losses estimated by MECO (1978), an additional KWH at the secondary level costs 4.5¢/KWH off-peak and 7.1¢/KWH on-peak today. This estimate includes no fuel price inflation past April 1980 and no peak month (summer or winter) data. Adding 10% more for oil price increases to April 1981 would raise the costs to 4.9¢ and 7.8¢. Of course, the estimate includes no allowance for any capital costs.

The estimates which I have derived elsewhere for the costs of the Seabrook plant (Chernick 1980a, 1980b) and the Pilgrim II plant (Chernick and Geller, 1979) indicate that the new capacity being built by NEPCO and its NEPOOL partners will be more expensive than current oil-fired generation, although it may eventually be justified by the increasing real price of oil.

Therefore, both current fuel costs and future capacity costs are quite high. If rates do not provide incentives for conservation commensurate with these costs, customers will not expend the effort and capital for conservation which is justified by current and future oil prices and by the cost of utility alternatives to burning oil. In effect, customers would be receiving electricity which is not worth as much to the customers as it costs to generate.

Q: In which proposed rates are declining blocks retained?

A: Proposed rates B-1, B-2, C-22, G-22, and H are composed of declining blocks. The first 375 KWH of proposed rate A-65 also consist of declining blocks.

Q: Do you believe that there is any reason to retain these declining block structures?

A: No. The declining blocks do not appear to have any advantages over flat rates. On the contrary, they distort customer incentives and discourage conservation. My position on this issue is consistent with that of the California Energy Commission Staff.

> The effect of declining blocks is to reduce the cost effectiveness of conservation investments to the customer. . . Since utility costs are not decreasing, conservation investments, in this [declining-block] example, should be encouraged with flat or inverted rates. (Legislative Issue Memorandum: Utility Rates to Encourage Conservation, March 20, 1980, p. 4).

This Commission has stated:

> In particular, declining block rate structures have outlined their usefulness. In the circumstances, it is simply unreasonable to charge lower rates as consumption increases. This can only encourage the additional use of electricity. The Commission intends to phase out declining block rates unless they meet the criteria set forth in the regulations proposed herein. (D.P.U. 18810, p. 13)

Those regulations provide that:

> Neither the metered nor the synthetic [i,e., non-time-of-use] rates shall incorporate a declining block structure unless it is specifically cost justified. Moreover, the cost justification must be so significant that it completely outweighs any environmental or energy policies. (Ibid, p. III).

Q: Has MECO presented any justification for retaining the declining block rate structures?

A: No. MECO has indicated in response to AG Information Request RD-5 (IR-RD-5) that it does not intend to remove declining blocks from its remaining rates until the Department issues final regulations on rate design. MECO offers no arguments that the current rates comply with the instructions in DPU 18810, nor that they otherwise serve a useful function.

Q: Has MECO used its proposed rate increases to decrease the steepness of the declining blocks in the rates which retain declining blocks?

A: Not consistently. In rates B-1 and C-22, lower use, higher priced blocks actually received larger increases than the lower priced tail blocks, so the slope of the decline would actually be greater under the increased rates than it was previously. The same phenomenon occurs in the proposed increases in the first 375 KWH of rate A-65.

Q: How would you suggest allocating the rate increases in the rates with declining blocks?

A: The most desirable action would be full-fledged rate redesign, with reallocation of revenue responsibility to classes, based on a comprehensive examination of the causal relationships between costs and energy use patterns. MECO is probably correct in avoiding any such extensive effort in the limited context of this general rate case. Short of comprehensive redesign, MECO could simply flatten all the existing rates. If there is a serious objection to a complete immediate reform of some of the declining block rates, MECO could at least move more directly toward flat rates by placing the entire rate increase in the tail blocks, and none in the higher, inner blocks.

The latter suggestion is really not a very radical one, and should not be difficult to implement. It certainly would be more effective than MECO's proposal in bringing rate incentives into line with system costs and in encouraging conservation. At the very least, each change in rates should decrease the extent to which price declines with usage. The Company's proposed rates B-1, C-22, and portions of A-65 actually increase the discount for large users.

Q: Do you believe that the A-65 rate should be flattened?

A: No. This rate is intentionally designed as an inverted rate, for social purposes. An evaluation of the social utility of Rate A-65 is outside the bounds of my testimony. The rate does have features on which I would like to comment. The price elasticity of the customers on this rate (especially those with low usage) is probably lower than that of other customers. Therefore, shifting revenues from Rate A-65 to other rates will probably encourage conservation. In general, the strongest price signals should be given to the groups with the greatest ability and inclination to respond to prices. Residential customers with low incomes or small consumption are likely to be less responsive than larger or wealthier residential customers, or industrial/commercial customers. In the long run, it would probably be efficient to extend an inverted-block structure to all residential rates. In the meantime, Rate A-65 is a step in the right direction.

On the other hand, there does not appear to be any justification for maintaining the declining block within the first 375 KWH of consumption in the AG-65 rate. MECO's rationale for this design is that it maintains "the reduced price relationship of this rate to customers having monthly usage within this range." The same reduced price relationship could be achieved by a flat rate, which would do less to encourage wasteful consumption and would equalize the benefits between customers.

As Tables 1 and 2 show, Proposed Rate A-65 offers much larger savings for larger users as well as lower prices for additional consumption by large users. Both the social goals of the rate and the conservation goals of NEESPLAN would be better served by a flat rate of 2.119¢/KWH for the first 375 KWH. An inverted rate structure within the first 375 KWH of rate A-65 would be even better, but selection of multiple rates and cut-off points can be more easily undertaken in the context of a broader rate design proceeding.

Table 1: Discounts Under Proposed Rate A-65, By Bill Size

KWH Used	A-22 Bill	A-65 Bill	Discount	Flat Rate Bill	Discount From A-22
22	$ 2.29	$ 1.80	$0.49	$0.47	$1.82
50	3.29	2.34	0.95	1.06	2.23
200	8.66	4.36	4.30	4.24	4.42
375	14.92	6.18	8.74	7.95	6.97

Table 2: Discounts Under Proposed Rate A-65, By KWH Rates

KWH Block	A-22 Rate ¢/KWH	A-65 Rate ¢/KWH	Discount ¢/KWH
22-50	3.578	1.92	1.658
51-200	3.578	1.35	2.228
201-375	3.578	1.04	2.538

While a flat rate in the first 375 KWH would be preferable to the proposed rate design, the latter still appears to be preferable to no Rate A-65 at all.

Figure 1 compares the discount relative to Rate A-22 under Proposed Rate A-65 and under a flat rate for the first 375 KWH. The flat rate discount for additional consumption is a constant 1.459¢/KWH; regardless of consumption level, while the Proposed Rate A-65 offers discounts as high as 2.538¢/KWH, as shown in Table 2.

Q: Which are the special promotional rates for space heating?

A: Rate B-1 provides substantial discounts compared to Rate A-22 for residential customers, and Rates B-2, T and V offer discounts compared to Rate C-22, for customers who utilize electric space heating. Rate V is limited to space heating, water heating, cooking and air conditioning, while the other promotional rates are available for all uses, so long as electricity is the sole source of space and water heating.

Q: How are these rates promotional?

A: Customers are being offered lower rates simply because they use electricity for space heating. This tends to encourage both the use of electric heating and the wasteful use of other end uses served on the same low rates.

Q: Should these uses be encouraged?

A: No. This is another way in which MECO is encouraging the use of large amounts of power, instead of encouraging conservation. Promotional rates, like declining blocks, discourage conservation.

Q: Would it be advantageous to close these rates to new business?

A: Yes. If new customers must pay regular rates (e.g., A-22 or C-22) for electric heat, they will have more incentive to take one or more the following actions:

1. Use oil or gas, rather than electricity, for space heat. While new oil furnaces are available with efficiencies in excess of 80%, serving new electric heating customers requires burning oil and transmitting and distributing the electricity at a total efficiency of 25% or 30%. Thus, about three times as much oil will be burned to heat a building electrically as would have been used to heat the same building directly.

2. Install heat storage and use off-peak electricity. NEESPLAN incorporates a goal of shifting all new electric space heating load to off-peak. It is time to begin discouraging the installation of conventional baseboard electric heating, which cannot easily be converted.

3. Use solar or wood heat as primary or supplementary sources.

4. Use a heat pump, which can deliver two KWH of heat for each KWH of electricity expended.

5. For a large building, cogenerate the space heat and other heating requirements with electricity.

6. Use base board electric heat, but with greater conservation measures (e.g., additional insulation) than would be justified under the promotional rates.

It is important to realize that, once a central heat distribution system is installed, a great deal of flexibility exists. An oil-fired hot water or forced air heating system can be supplemented or replaced by solar heat, by a wood or waste burning furnace, by a heat pump or central storage electric heat, by a district heating system, or by a cogeneration system. Once the building is constructed with base board electric heat, converting to other heating systems requires modifications in living spaces and walls. These modifications may be very difficult, and costly, if not impossible. Upgrading building efficiency is also more difficult after the building is completed. Considering the longevity of the building stock, it seems to be quite important to discourage, if not prohibit, irrevocable commitments to this inefficient and expensive heating source.

Q: Are these promotional rates limited to inherently off-peak uses?

A: No. In general, the rates are extended to all uses in an electrically heated space. The space heating is not limited to offpeak service. For some customers heating may be a heavily on-peak use. This is particularly true for commercial rates such as Rate V. Both commercial heating and commercial air conditioning are apt to contribute heavily to seasonal peaks. In Rates T and V, even water heater control is not required.

Q: Should customers currently on the promotional rates be transferred to corresponding standard rates, such as A-22 and C-22?

A: This action would probably cause a large amount of dislocation for a small benefit. Most of these customers must have committed themselves to electric heat in the period of declining electric prices, or in the mid-70's, when oil and gas availability problems may have made electricity seem to be the only viable option. These commitments, made in good faith under the conditions of the times, cannot easily be reversed. Flattening the promotional rates while subsidizing the implementation of conservation, alternative energy, and load management will provide customers on them with the motivation and means to reduce the burden they impose on the rest of the system. Increasing the revenue contribution of the promotional rates to the same ¢/KWH level as the standard rates will probably do more to lower customers' standard of living (or profits) than to promote conservation.

Q: What rates appear to prohibit alternative energy development?

A: Rates B-1, B-2, and T include as their first Condition, "Electricity will be the sole source of energy for space heating and water heating, and supplied

only under this rate," or some minor variant on that wording. Rate V is only available if "the Customer's premises are heated exclusively by electricity. Any air conditioning, cooking, and non-process water heating. . . may also be served under this rate, provided that electricity is the sole source of energy for such purpose and all the requirements for that purposes are metered hereunder. "The Farm Use discount on Rate A-22 and Rate A-65 is available only "where all electricity is supplied by the company".

All of these conditions appear to prohibit customers on these special rates from generating any electricity from wind, water, solar, or other renewable sources, or by cogeneration. The conditions on Rates B-1, B-2, T, and V also appear to prohibit non-electric energy input for space and water heating (and air conditioning and cooking as well in Rate V), thus barring these customers from installing solar heating, wood-burning, or cogeneration equipment.

MECO indicated in IR RD-9 that it did not intend to exclude renewable energy sources by the B-1, B-2, T and V conditions. It is not clear whether MECO intends to bar cogeneration, since IR RD-9 was answered in a very narrow manner. Nor is it clear why the Farm Use condition exists at all; IR RD-7 specifically asked MECO for this information, but MECO did not respond. In any case, MECO

was not able to supply a single reason for any of these conditions. Therefore, they should either be deleted or limited to prohibiting fossil fired, non-cogenerating energy sources.

Rates B-1, B-2, T and V are promotional, and should therefore be closed to new business, but existing customers interested in developing alternative energy sources should not be discouraged by the threat of transfer to a more expensive rate schedule. Indeed, MECO should be encouraging such development.

Q: How does MECO distribute the proposed rate increases within the rates which have demand charges?

A: In both Rate G-22 and Rate H, MECO places the entire increase in the demand charges and does not increase the energy charges at all.

Q: Is this appropriate?

A: No. It is clearly unsatisfactory to recover capital costs by means of demand charges. Costs related to consumption by all customers (e.g., generation, bulk transmission) or large groups of customers (e.g., local transmission, distribution) should be captured by time-of-use rates, or better yet, by responsive peak rates, but not by demand charges. Demand charges have three major flaws in this regard:

a. Demand charges are zero for all points in time during which demand is less than a previously established (or forecast) demand in the billing period. (With some of MECO's proposed rates, ratchet provisions may effectively make the billing period an entire year.) As a result, demand charges provide no incentive to conserve at those times which are off the customer's peak but which are very much on the utility peak. If a large portion of the revenue requirement is allocated to the demand charges, the importance of the energy charge is diminished.

b. The time when demand charges influence a customer's behavior (i.e., at the customer's peak) is not inherently a function of system demand, plant availability, or any other external condition which influences costs.

c. With high demand charges, it may be cheaper for customers, by load shifting, to use more energy in the utility's peak period while cutting their individual peaks. One such customer might find it advantageous to limit loads to 5 MW throughout the peak (e.g., 11 a.m. to 5 p.m. in the summer), rather than using 6 MW for the hour from noon to one p.m. and 3 MW for the rest. If other

customers similarly avoid peaks at the other hours, the result is an average use of 5 MW per customer, rather than 3.5 MW, throughout the peak period, due to the demand charges.

A different type of cost is incurred when facilities are first provided to allow a customer to draw a certain amount of power. These costs do not vary with the customer's actual demand, but with the maximum power level to which the customer wishes access. Therefore, the costs of providing access should be recovered through hookup or customer charges which respond to the amount of access provided, rather than to the customer's demand. In summary, demand charges are not very effective in promoting conservation, reducing peak demand, or reflecting costs. By placing the rate increases in the H and G-22 rates in the demand charges, MECO is not improving the pricing signals to its large customers, and is encouraging the continued wasteful use of electricity.

Q: Does MECO offer any defense for this action?

A: Yes. In IR RD-1, MECO refers to the level of the NEPCO wholesale demand charges as its only justification for increasing its retail demand charges. MECO offers no explanation as to why the rates charged by one part of NEES to another should dictate its retail rate design. On the contrary, there are numerous reasons for believing that the

NEPCO demand charges are totally irrelevant to MECO's rate design.

1. The NEPCO demand charges almost certainly include large expenses which are due to energy, rather than peak demand. If only peak demand existed, and no other energy sales took place, the NEPCO generation system would consist exclusively of peaking plants (diesels and gas turbines) and the transmission system would not be designed to carry large amounts of power from remote steam and hydro plants. Yet, most utilities include substantial portions of expenses related to non-peaking facilities in their demand charges; it seems reasonable to assume that NEPCO does likewise. Whatever the propriety of the NEPCO demand charges for wholesale cost allocation, they are unlikely to represent the real cost of increased demand.

2. Even if the NEPCO demand charges had any real significance, MECO does not know what proportion of its customers have peak demands coincident with MECO, NEPCO, or NEPOOL peaks (IR RD-2), and has apparently not studied the effect of the retail demand charges on consumption patterns (IR RD-1). Hence, it can not be determined whether higher demand charges will shift demand away from MECO's peak hour or toward it.

3. The generation plan of NEPCO for the next decade is not oriented to meeting peak, but to supplying cheaper baseload energy. This plan includes participation in four nuclear plants and coal conversion at existing oil-fired plants, none of which would be justified by peak demand.

4. Since MECO requirements represent 70% of NEPCO's projected 1981 output, most of any additional costs borne by NEPCO are almost certain to be passed back to MECO sooner or later. In fact, since 43% of New England electric consumption occurs in Massachusetts, almost any increase in NEPOOL costs is apt to be felt by Massachusetts consumers, although the connection is not as intimate as that between MECO and NEPCO. Therefore, the best interests of MECO's customers are apt to be served by minimizing NEPCO's costs, regardless of wholesale rate design. Energy charges track NEPCO's real, avoidable costs much better than demand charges.

Q: How should the rate increases for Rates G-22 and H be apportioned?

A: When rates are redesigned, demand charges should be greatly reduced or eliminated, to be replaced by time-differentiated energy charges. In the limited context of a general rate case, it may not be feasible to do more

than hold the demand charges constant, while placing any increases on the energy charges. I would recommend that at least all the increase granted be placed on the energy charges. If the demand charges were reduced somewhat and the energy charges further increased, so much the better.

The declining blocks based on "kilowatt hours per kilowatt of Demand" are essentially also demand charges, and should be phased out. In a month in which billing demand is determined by the ratchet provision, these "load factor" declining blocks are indistinguishable from any other declining block structure.

Q: Why is the retention of 80% demand ratchets improper?

A: A customer with strong seasonal, weather-induced, or even random peaks has less incentive to control load in months between peaks under a higher ratchet. For example, a summer peaking commercial customer may have a 70 KW peak one July and anticipate a similar peak the next summer. In the meantime, the customer may never have a demand over 50 KW. This hypothetical customer's bill would not be influenced at all by demand levels, except those in the summer which establish a 56 KW billing demand for all the other months. Therefore, the demand charges have no influence on the customer's behavior in any month outside the summer, including the winter peak. While demand charges are not very good at encouraging conservation or

load management in any case, large ratchets can only make them worse.

Reduction or elimination of ratchets will increase the number of months in which customers on G-22 and H will have an incentive for controlling their loads.

Q: Other than in rate design, has MECO done all it reasonably could to further the professed objectives of NEESPLAN?

A: No. MECO could be doing much more to promote conservation and load management. MECO should be requesting the Commission's permission to include the following features in its conditions for various rates:

1. Closing all rates to future master metering, allowing check metering in existing master-metered buildings, allowing submetering in existing buildings which are owned or controlled by the tenants (e.g., condominiums) and even requiring (or encouraging through rate structuring) conversion of existing master-metered builings to individual metering, submetering, or check-metering.

2. Requiring all new electric heating installations to be compatible, in terms of wire gauge and heater location, with future conversion to storage heating.

3. Establishing minimum efficiency standards for new installations of electric heat (building insulation and other weather proofing measures), hot water (tank design and insulation, hot water pipe insulation, and efficiency of end uses, such as shower heads and built-in dishwashers), and central air conditioners (unit efficiency).

4. Prohibiting electric heating in new speculative or rental housing.

MECO should also be requesting funding or authorization for conservation programs, beyond the federally mandated audits. For example, MECO could be distributing free insulation kits to its water heating customers, providing low-interest or no interest loans for conservation investments and publishing fair and general buy-back rates.

Q: What are the advantages of preventing new master-metering installations and converting existing installations to individual meters?

A: The master-metered electricity user essentially faces a zero price of energy, and therefore has no incentive to use it wisely. Any connection between the behavior of the master-metered user and the costs to that user is quite tenuous. Under direct utility metering, submetering (in which the building pays the utility, and the occupants are billed by the building), or check-metering (in which the building bill is simply apportioned to the occupants in proportion to their KWH consumption) the electricity consumer can save money by saving energy.

Consumers do seem to respond to direct metering. Federal Energy Administration figures (UCAN Manual of Conservation Measures, Conservation Paper #35) indicate that single-metered apartments use about 25% less energy than master-metered apartments; Boston Edison data (BECO, 1978) indicates that single-metered apartments use only

about half the heating energy of master-metered unit. A recent submetering convertion in New York appears to have reduced occupant electric consumption by 35% (Electrical Week, 5/2/80, p. 6).

Q: Do the changes you have suggested making in MECO's proposed rates constitute the sorts of rate design charges which should be deferred to DPU 19846, the time of use case?

A: Not really. DPU 19846 will have to deal with such questions as:

1. What is the actual cost of additional electric consumption, by time, season, day, and voltage level?
2. How should the discrepancies between cost and allowed revenues be resolved?
3. How should cost considerations affect the revenue allocations between classes?
4. Which periods should be designated as peak periods?
5. Which customers should be placed on time-of-use rates?
6. Will inverted rates increase efficiency, and if so, what blocks should be discounted and by how much?

In contrast, the improvements in MECO's rate design which I have suggested are quite simple. Flattening rates, closing promotional rates, emphasizing energy charges rather than demand charges, decreasing ratchets, encouraging alternate energy development, and discouraging master-metering can all be undertaken without extensive numerical analysis. They are appropriate intermediate

steps in rate design under a wide variety of circumstances: whether new energy costs 7¢/KWH or 15¢/KWH, whether the appropriate peak period is 12 hours in the winter or 5 hours in the summer, whether or not revenue responsibility should eventually be shifted between classes, whether time-of-use rates are justified for all customers or for only the largest, and so on. Whatever the Commission's eventual findings in DPU 19846, MECO will have a more efficient rate design in the interim if MECO's proposed rates are adjusted as I have suggested.

Q: Does this conclude your testimony.

A: Yes.

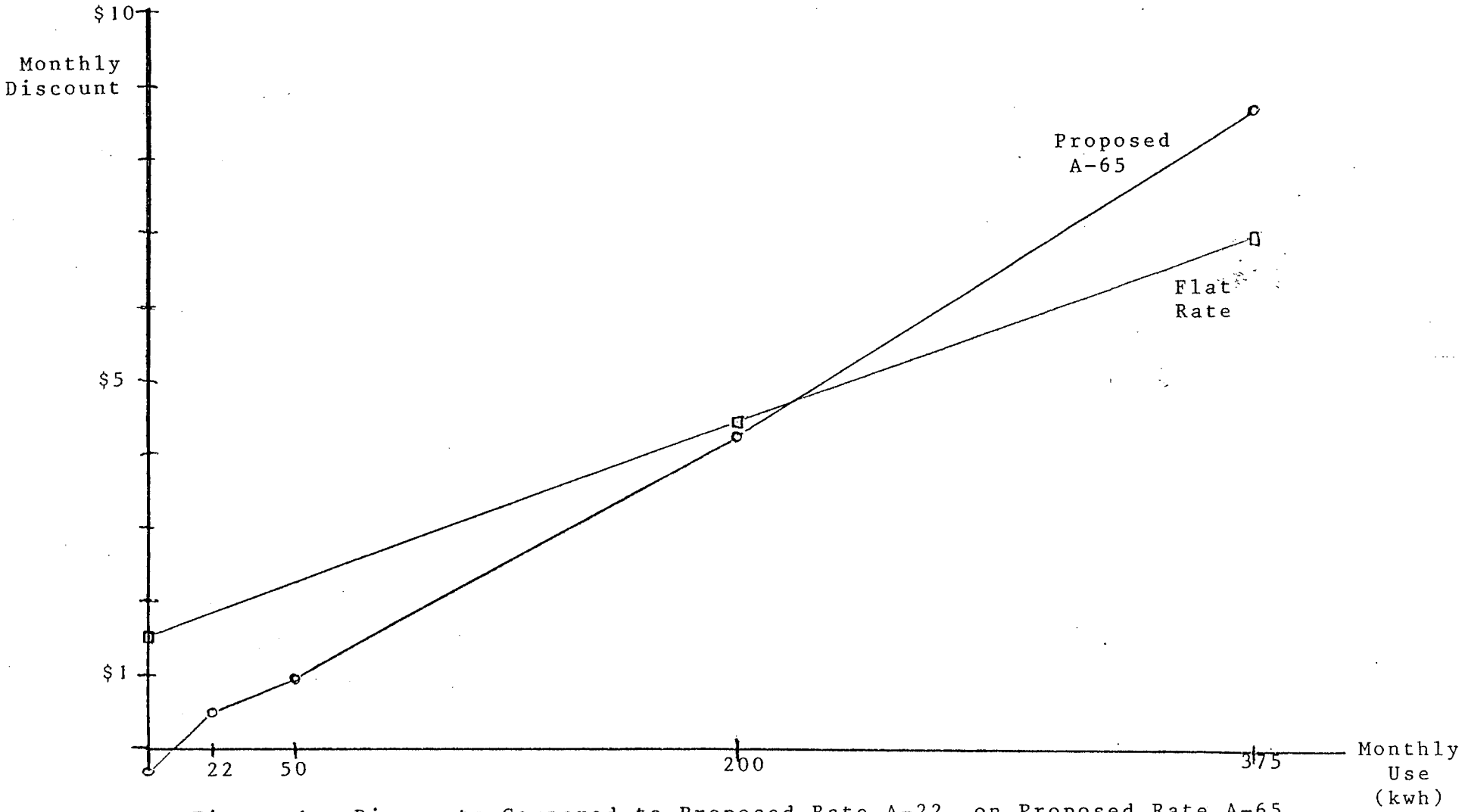

Figure 1: Discounts Compared to Proposed Rate A-22, on Proposed Rate A-65 and on a Comparable Flat Rate for the First 375 KWH.

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