April 22, 1974

Councilman Marvin Braude
City Hall
Los Angeles, California 90012

In the Matter of Niagara Mohawk Power Corporation
(Nine Mile Point, Unit No. 2)
Docket No. 50-410

Dear Councilman Braude:

Pursuant to the request contained in your letter to the Commission dated April 15, 1974, I enclose a copy of the testimony given by Mr. Peter R. Mick before the Atomic Safety and Licensing Board In the Matter of Niagara Mohawk Power Corporation, (Nine Mile Point, Unit 2), Docket No. 50-410.

Sincerely,

Bernard M. Bordenick, Attorney
Office of the General Counsel

Enclosure

bcc: Claire Miles
(Public Information)

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Environmental Defense Fund

DIRECT TESTIMONY

of

Peter R. Mick

Q. Please state your name and address?

A. Peter R. Mick. My address is 46 South Burnett Street, East Orange, New Jersey.

Q. What is your occupation?

A. I am an Electronics Engineer.

Q. What is your academic background?

A. I received the Bachelor of Science degree in Electronics Engineering from Farleigh Dickinson in 1961 and did graduate work in electronics engineering at both Farleigh Dickinson and the Newark College of Engineering.

Q. Please summarize your professional experience?

A. My professional experience has primarily been concerned with the design and development of metering and time control equipment. I was involved in the design of the timing equipment utilized in the space program for missile launching purposes. I have also been involved

with the design of special purpose computers particularly as applied to airborne navigational equipment and radar tracking. For the past five years I have specialized in the design and development of remote meter reading equipment as applied to utility watt-hour meters. My work in this latter effort is on behalf of Automated Technology Corporation which is located at 300 Hudson Street, Hackensack, New Jersey.

Q. Please briefly describe the business of Automated Technology Corporation.

A. ATC has developed a system which permits electric, gas and water utility meters to be read automatically with the reading transmitted over the utility's existing power lines to central station computers. The unique aspect of the ATC Remote Automatic Meter Reading and Control (RAMRAC) system is that it permits the utility to be used for two way communication. It is therefore possible to transmit signals to individual meters or to groups of meters thereby permitting selective load shedding as well as load control monitoring including

by time of consumption. The two way communication capability of the RAMRAC system has been successfully tested on several utility systems.

Q. Are you familiar with the position of the Environmental Defense Fund in this proceeding?

A. I am not familiar with the details of its presentation. I do understand that the Environmental Defense Fund is contending that modifications can be made to the rate schedules typically used by electric utilities and that it would thereby be possible to reduce peak consumption.

Q. What is the purpose of your testimony and what events lead to your appearance in this proceeding?

A. My purpose is to testify as to the availability of equipment to accomplish load control, monitoring and shedding. Recently Automated Technology Corporation was contacted by representatives of the Environmental Defense Fund who explained their position in favor of peak load pricing. EDF was interested in ascertaining the availability of equipment which would permit the

implementation of time-differentiated pricing. Dr. Habicht and Mr. Gillen visited our offices and explained the equipment requirements for peak load pricing. We described and demonstrated the suitability of the RAMRAC system for such purposes. Subsequently, ATC agreed to present testimony on the technical feasibility of peak load pricing.

Q. Please briefly describe how the RAMRAC system would operate.

A. An optical encoder would be installed on each watt-hour meter and utilizing the power transmission system the reading would be transmitted to a central station computer. It would also be possible to install a light signalling system at each point of consumption. The utility, by causing one of several colored lights to go on, could advise the consumer as to the operative rates at any point in time. For example, it would be possible to advise the consumer that capacity deficiencies had necessitated the early applicability of a peak pricing rate.

In a more refined state groups of individual watt-hour meters, up to 500 in number, are placed under the control of satellite stations. Once this refinement is made it is possible to transmit instructions to individual meters through the satellite stations. For example, it would be possible to instruct selective meters to shut-off during peak or emergency periods and to restart once adequate capacity becomes available. Another instruction would be for meters to read themselves and transmit their readings to the central station for billing and load monitoring purposes. Because it is possible to transmit a meter's current reading, recording procedures are not at all affected by power outages. Once power is restored it is possible to obtain current data.

Q. Are there other equipment systems which could perform some of these functions?

A. Yes. The unique feature of the ATC system is that it utilizes the power system for two-way communication. It is also possible to utilize independent communication systems, for example through the installation of radio control facilities. Radio signals can be used

to communicate directly with watt-hour meters. It is also possible to equip watt-hour meters with ripple control devices which could be used to implement peak load pricing. In essence, a signal would be sent to the meter and it would activate a pre-determined instruction. For example, to begin the separate recording of consumption during a peak period or even to cut the meter off. Time switches could also be installed that would permit the measurement of consumption during peak periods.

Q. Is it your testimony that ATC and other manufacturers can now provide the equipment necessary to permit the implementation of peak load pricing?

A. Yes.

Q. Mr. Mick, in view of the fact that both utilities and regulatory commissions must be concerned with the economic as well as the technical feasibility of equipment, can you indicate the projected cost of the RAMRAC system?

A. Yes. Large scale implementation of the RAMRAC system could be accomplished at a cost of approximately $30 per customer. That is, for a utility system that serves 1,000,000 customers the cost would approximate $30 million. The operating energy cost of the RAMRAC system would be below one watt continuously. It is important to recognize, however, that it is possible to begin implementation on a stepped basis. As soon as any single meter or group of meters is equipped with the optical encorder it is possible to begin monitoring its performance and controlling its operation, for example by shedding its load.

Q. Mr. Mick, does that complete your testimony?

A. Yes.