UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
Louis J. Carter, Chairman
Dr. Oscar H. Paris
Frederick J. Shon

In the Matter of:	)	
Consolidated Edison Company of New York, Inc. (Indian Point Unit Number 2)	)	Docket Nos. 50-247 SP 50-286 SP
Power Authority of the State of New York (Indian Point Unit Number 3)	)	
	)	April 9, 1982

AUGMENTATION BY THE GREATER NEW YORK COUNCIL ON ENERGY OF THE BASIS FOR ITS FIRST CONTENTION

This submission is to satisfy the requirement of the Board Order of April 2, 1982 regarding intervenor status of GNYCE. The Board therein instructed GNYCE to submit "a basis for greater specificity" for a contention comprised of the first and last sentences of our Contention I as follows:

> Viable alternative strategies exist to incurring the excess fuel costs associated with early and permanent shutdown of Indian Point. The failure of Sate agencies or the utilities to implement such strategies cannot be held to imply that such strategies are not viable, would not save or produce sufficient energy, or that such strategies would not limit or eliminate excess fuel costs.

GNYCE believes that the establishment of reasonable alternative energy supply strategies and their economic impacts on the New York City area is a major necessary component in any attempt to meaningfully address

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the Commission's question 6 which states:

> What would be the energy, environmental, economic or other consequences of a shutdown of Indian Point Unit 2 and/or Unit 3.

In general, the energy-economic consequences of a shutdown will depend upon the economics of the systems which will be called upon to supply the electricity that would otherwise have been supplied by the Indian Point plants. Based on the studies which have been elsewhere cited by the licensees regarding the economics of a shutdown, e.g. those by the General Accounting Office and the Rand Corporation, GNYCE believes that practical present-day options for supplying electricity to the New York City area in an economical manner have been ignored, and would be ignored were not GNYCE a party to this proceeding.

The energy options of greatest significance to New York's energy security and economic picture are conservation and cogeneration. Both of these types of endeavors are proceeding apace in New York by virtue of their wide range of highly economical applications. This is of great importance since the one-quarter to one-third of New York's electricity now supplied by Indian Point is threatened simultaneously by regulatory action, forced outages, and unanticipated accelerated aging of the plants.

Conservation is the practical elimination of energy consumption above that actually required to perform needed energy services, e.g. heat, transport, light. In other words, conservation is the use of air conditioners and cars which are efficient enough so that we can afford to use them in an era of high energy costs. As it happens, the ways in which we use energy have not

been nearly as efficient as they could be, and high energy prices now are forcing the economically optimum level of efficiency far above its present value for many devices and methods. While this is of course true for each type of New York's energy uses, we are concerned here specifically with electricity use, for that is what Indian Point supplies. In reducing consumption while maintaining the same level of energy services, conservation is often thought of as a "source" of energy. This is especially appropriate in this context since we are concerned with replacing or displacing the need for the Indian Point plants in the case of a shutdown.

Conservation can include eliminating needless energy consumption such as leaving lights on in unoccupied buildings (so-called "housekeeping measures"), efficient end-use matching such as using fuels for heating rather than less efficient and more expensive electricity, and the use of more efficient devices such as motors and appliances. Investments in conservation are usually the most cost-effective energy investments because they permanently curtail a certain amount of fuel use and thus become more economical as fuel costs escalate with time. Much of the material on conservation in New York City has recently been compiled in a study by the New York City Energy Office.[1] For electricity in particular, the CEO found a minimum potential conservation of 5.7 billion kWh or 20% of total electrical consumption. This analysis was based on conservative 1979 figures and limited investments to those with payback periods of less than six years. This level of highly economical conservation would save New York City over $550 million and would displace 71% of the generation value of both Indian Point plants combined.

While much of this conservation happens automatically, due to people's current awareness of the high electric rates in the New York metropolitan area, and the regular rates of replacement of appliances, increasing the level of conservation can also be accelerated by education and statute. New York City now has an energy office which is designing an energy policy for the city which will stress conservation. Under consideration are building energy codes and programs to improve commercial and industrial energy efficiency.

Cogeneration is the simultaneous, sequential generation of electricity and useful heat. Because of immutable laws of thermodynamics, generating electricity from burning fossil fuel requires the rejection of two-thirds to three-fourths of the energy value of the fuel in the form of waste heat. While this fact cannot be significantly altered for practical electrical plants, the status of the rejected heat can be changed from waste to useful simply by creating it in such a place and in such a manner so that it may be used. In a cogeneration plant, electricity is generated in the same way as in a central utility plant, or by internal combustion engines or gas turbines, but usually on a smaller scale. The plant is typically located in a building or near a complex of buildings so that its reject heat in the form of hot water can be readily used to supply some or all of the heat (space heat, hot water, air conditioning) needs of the facility. Such systems are of practical use for residential, commercial, and industrial facilities in sizes from 15kWe to hundreds of MW. Examples of cogeneration

plants in all three sectors exist in New York City, and the economic benefits they enjoy from utilizing fuel at two to three times the efficiency of the electric utility are attracting further investment in this updated version of an old technology.

GNYCE, whose Director, a Research Scientist at New York University who has studied cogeneration issues for four years and is currently a commercial consultant on cogeneration, has produced a brief analysis[2] of the potential impact of cogeneration on the energy economy of New York City. It found that a mid-range case of a total 1500MW gas-fired cogeneration capacity, readily built within five years and well below the level of economic saturation, would result in the generation of electricity equivalent to 1.3 times that generated by both Indian Point plants combined, i.e. 11 billion kWh. Fuel costs were compared for the Con Edison (and PASNY) system "as-is", assuming the continued operation of Indian Point, and the same system without Indian Point but with 1500MW of cogeneration. The system including the cogeneration was found to save the city's economy $600 million per year in fuel costs.

While cogeneration saves its practitioners sizable amounts of money (the Big Six Towers complex in Queens saved $500,000 in the first year from a $2 million investment for example), with typical payback periods between three and six years, it can also save Con Edison's regular customers money. This conclusion was reached in a 1980 study by Brookhaven National Laboratory of the impact of cogenration on the Con Edison system.[3] It

found that under rate-setting requirements promulgated by FERC pursuant to the Public Utility Regulatory Policies Act of 1978 (PURPA), all of Con Edison's regular, non-cogenerating customers would benefit from the connection of cogenerators to the grid. This is due to the reduction by the cogenerators of Con Edison's most expensive marginal peak plant and fuel use, and the long-term reduction in required utility plant construction. The most detailed cogeneration-electric system analysis to date, the Brookhaven study was presented as testimony before the New York State Public Service Commission in the still ongoing cogeneration rate case. At this point, due to Federal and State legislation and regulation, most of the institutional barriers to cogeneration in the New York City area have been eliminated, and within the next years privately financed cogeneration system installations are expected to accelerate. The New York State Legislature is currently considering bills which would add further impetus to cogeneration by prioritizing cogenerators for natural gas connections and by having PASNY finance public and municipal cogeneration projects.

There are a variety of other sources of energy which may economically take up generation lost by a shutdown of Indian Point, including coal conversion of oil-burning plants which Con Edison promotes, increased importation of economical hydropower from Canada, and burning of municipal refuse. However, only conservation and cogeneration can achieve such a dramatic impact on energy costs in New York within the next five years without assuming any vast political or social changes. Fortunately, the

powerful economic drive towards these more efficient systems which results from the unsurpassed and rapidly escalating electric rates in New York, will within the next five years, mitigate the costs of the existing Con Edison system and render a shutdown of the Indian Point plants more feasible.

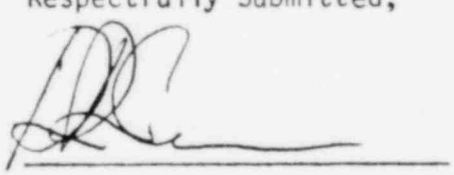
It is essential that these issues be included in the Board's record in this proceeding, since without them, an inaccurate appraisal of the economic impacts of shutdown will result. No other party to this proceeding has marshalled the expertise and authorities required to evaluate the effects of conservation and cogeneration on the economic consequences of a shutdown of the Indian Point plants.

References:

1. DeMetro, James, et al, Energy Consumption in New York City, New York City Energy Office, April, 1981
2. Corren, Dean, The Potential for Cogeneration in New York City, testimony before the Council of the City of New York, February, 1981
3. Bright, Robert, et al, The Avoided Costs Associated with Cogeneration: A Case Study of Con Ed, National Center for the Analysis of Energy Systems, Brookhaven National Laboratory, U.S.DOE contract No. DE-AC02-76CH00016

Served by hand on all parties at the pre-hearing conference, April 13, 1982

Respectfully Submitted,



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