BEFORE THE UNITED STATES

ATOMIC ENERGY COMMISSION

In the Matter of

Consolidated Edison Company of New York, Inc. (Indian Point Station, Unit No. 2)

Docket No. 50-247
AFFIDAVIT
9-4-71

JOHN CLARK, being duly sworn, deposes and says:

1. This affidavit is submitted at the request of the Hudson River Fishermen's Association, intervenors, in opposition to the Motion of Applicant for an Order Establishing Further Procedural Requirements to Implement the National Environmental Policy Act of 1969.

2. I received my Bachelor of Science degree in Fishery Science from the University of Washington in 1949. I joined the Woods Hole Fisheries Laboratory in November of 1949 where I conducted research in ichthyology and fisheries management through 1959. In 1960 I joined the United States Bureau of Sports Fisheries and Wildlife and was co-founder of the Sandy Hook Marine Laboratory in Sandy Hook, New Jersey. At that laboratory I served as Assistant Director and conducted research in the ecology and life patterns of salt water fish, including striped bass, bluefish and fluke through September of 1970. Thereafter, I served as curator of the New York Aquarium in Brooklyn, New York from October, 1970 to January, 1971. I am presently employed by the American Littoral Society and am writing two books. I am past president and now board chairman

47
hearing

of the American Littoral Society's Conservation and Natural History Group and a member of the American Association for the Advancement of Science, the American Fisheries Society and the Atlantic Fisheries Biologists. I am the author of the book entitled Fish and Man: Conflict in the Atlantic Estuaries, published by the American Littoral Society in 1967, and author-editor of the book entitled Sea Water Systems for Experimental Aquarium published by the U.S. Department of the Interior in 1965. I am the author of 50 scientific papers and reports, including "Thermal Pollution and Aquatic Life" published in Scientific American in March, 1969 and "Seasonal Movements of Striped Bass Contingents of Long Island Sound in the New York Bight" published in Transactions of the American Fisheries Society in 1968.

3. The Hudson is an integral part of an extensive and productive ecological system embracing coastal waters of Northern New Jersey, the bays and harbors surrounding New York City and the north and south shores of Western Long Island. Historically the Hudson has enriched this whole system and served as the primary spawning and nursery area for anadromous species - sea fish that breed in rivers. Although pollution and other side effects of industrialization have dampened fisheries production, the Hudson still has an extremely high potential. If its ecological health is carefully maintained, the Hudson will continue to provide fish and outdoor recreational opportunity for the New York metropolitan area.

4. The major fisheries supported by the Hudson are

for shad and striped bass. Shad are caught commercially in the Hudson. Expected yearly catches are about 250,000 pounds, but the potential for a clean Hudson is 10 times this catch or more. The striped bass produced by the Hudson are caught primarily in contiguous coastal waters by sport and commercial fishermen. Statistics are poor, particularly on the widespread sport fishery, but the Hudson appears to contribute a substantial part of an estimated combined commercial and sport catch of 20 million pounds per year of striped bass in Connecticut, New York and New Jersey coastal waters. More than 200,000 sportsmen in the 3-state area fish for striped bass, the Atlantic coast's most valuable species.

5. In the Hudson, nearly all striped bass spawning takes place north of Indian Point. After hatching the young are water born for a month or more during which they move down river into or through the Indian Point area - Cornwall to Croton. While water born they are less than 2 inches long and thus from 90 to 100 percent not screenable. Therefore, nearly all would be pumped into any protective screen and carried through the condensers of the cooling system of any power plant. In that process they would be subject to extreme mechanical damage and heat shock. High mortality is to be expected of tiny fish that are pumped through the condensors, although there are no estimates available for the quantity of non-screenable sizes of young fish that have been killed by Indian Point No. 1 over the years.

6. Unfortunately, Indian Point is located where its effect on striped bass is maximum. The five other major species of the Hudson are also at the maximum vulnerability in this area: the young of white perch, herring, alewife, anchovy, and tomcod reach abundance maxima on the shores between Cornwall and Croton. Young shad migrating to the ocean from their nurseries up river would also have to pass by Indian Point.

7. The substantial fish kills that have occurred at Indian Point No. 1 show that even when the young fish reach screenable sizes (beyond 2 inches) they are not safe from being drawn against the screens and killed. So far no effective means of preventing large fish kills has been devised for Indian Point No. 1 where from hundreds to over 20,000 fish per day have been killed on the screen. One would expect the kills of young fish to be multiplied greatly by the new, much larger, Indian Point No. 2 plant which would be operated at the same cite, in the middle of the fish nursery area. By straight proportion of pumping water the effect of the operation of Indian Point No. 1 and 2 would increase to four times that of Indian Point No. 1 alone. The problem would be particularly aggravated in winter when the heated effluent attracts masses of young fish to the plant cite.

8. One must also be concerned that chemical and thermal pollution will reach higher deleterious levels with the greatly increased power of Indian Point No. 2 particularly at summer maximum temperatures (over 75°) when the environment is already approaching stress levels. Also involved is the total

effect of entrainment of the communities of small floating life that make up the food chain of the fishes, from phytoplankton to invertebrates to baitfish.

9. Adverse effects on the fishery potential of the Hudson would be very substantially reduced, if cooling could be accomplished by means, such as cooling towers, other than once-through cooling.

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John Clark

Sworn to before me
this day of September, 1971

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Notary Public

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CERTIFICATE OF SERVICE

I hereby certify that I have served the attached Affidavit of John Clark by mailing copies thereof first class and postage prepaid, to each of the following persons this 9th day of September, 1971:

The Honorable James R. Schlesinger
Chairman
U.S. Atomic Energy Commission
Washington, D.C. 20545

The Honorable James T. Ramey
Commissioner
U.S. Atomic Energy Commission
Washington, D.C. 20545

The Honorable Wilfrid E. Johnson
Commissioner
U.S. Atomic Energy Commission
Washington, D.C. 20545

The Honorable Clarence E. Larson
Commissioner
U.S. Atomic Energy Commission
Washington, D.C. 20545

The Honorable William O. Doub
Commissioner
U.S. Atomic Energy Commission
Washington, D.C. 20545

Samuel W. Jensch, Esq.
Chairman, Atomic Safety and Licensing Board
U.S. Atomic Energy Commission
Washington, D.C. 20545

Mr. R. B. Briggs
Molten Salt Reactor Program
Oak Ridge National Laboratory
P. O. Box Y
Oak Ridge, Tennessee 37830

Dr. John C. Geyer
Chairman, Department of Geography and Environmental Engineering
The Johns Hopkins University
513 Ames Hall
Baltimore, Maryland 21218

Anthony Z. Roisman, Esq.
Berlin, Roisman & Kessler
1910 N Street, N.W.
Washington, D.C. 20036

J. Bruce MacDonald, Esq.
New York State Atomic Energy Council
112 State Street
Albany, New York 12207

Myron Karman, Esq.
Counsel, Regulatory Staff
U.S. Atomic Energy Commission
Washington, D.C. 20545

The Honorable Louis J. Lefkowitz
Attorney General of the State of New York
80 Centre Street
New York, New York 10013

LeBoeuf, Lamb, Leiby & MacRae
Attorneys for Applicant
1821 Jefferson Place, N.W.
Washington, D.C. 20036

Algie A. Wells, Esq.
Chairman
Atomic Safety and Licensing Board
Panel
U.S. Atomic Energy Commission
Washington, D.C. 20545

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John Clark

Sworn to before me this

4th day of September, 1971

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Notary Public