



UNITED STATES HOUSE OF REPRESENTATIVES
TRANSPORTATION AND INFRASTRUCTURE COMMITTEE
SUB-COMMITTEE ON WATER RESOURCES AND ENVIRONMENT

THE IMPACT OF AQUATIC INVASIVE SPECIES ON THE GREAT LAKES

John M. Kahabka

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Good morning Mr. Chairman and distinguished members of the Subcommittee. My name is John Kahabka. I serve as Manager of Environmental Operations for the Power Generation business unit of the New York Power Authority (NYPA). I thank you for your attention to this issue and appreciate the opportunity to testify.

The New York Power Authority is the nation's largest state-owned electric utility, with 18 generating facilities and more than 1,400 circuit-miles of transmission lines. The Authority operates without the use of tax dollars or state credit, financing its operations with revenues earned from sales of electricity and through the sale of bonds and notes for capital projects. The Authority supplies electricity to government agencies, community-owned electric systems and rural electric cooperatives, private utilities and to private sector businesses and non-profit institutions in return for commitments to protect jobs. Our Mission is to provide clean, economical and reliable energy consistent with our commitment to safety, while promoting energy efficiency and innovation for the benefit of our customers and all New Yorkers.

My responsibilities, as Manager of Environmental Operations, include interaction with regulatory authorities, local governments, operations staff and consulting personnel to ensure that commitments related to a variety of programs at Power Authority facilities are maintained in an environmentally compatible manner.

For a number of years I have also represented the American Public Power Association (APPA) on the Aquatic Nuisance Species (ANS) Task Force, the interagency committee established by the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, P.L.101-636) and chartered under the Federal Advisory Committee Act. One of the goals of this task force is to minimize the harmful effects of aquatic nuisance species already introduced into the waters of the United States.

Despite the best preventive efforts, new nonindigenous aquatic species are certain to be introduced into U.S. waters. Once an introduced species is identified as causing harm, or having the potential to cause harm, the ANSTF works to identify environmentally sound methods that can control further spread and minimize harm to public interests. In addition to developing species-specific control plans, other activities include the development of rapid response capabilities, survey and monitoring efforts,

review and approval of state management plans, Regional Panels and research and education specifically related to monitoring and control.

Among the electric generation facilities owned and operated by NYPA are two major hydroelectric facilities within the Great Lakes Basin, several small hydro facilities, a pumped storage facility in the northern Catskills, and fossil-fuel power plants in New York City. At the time the zebra mussel first made its appearance, the Authority also owned and operated two nuclear power plants, one of which was located on Lake Ontario. The Power Authority considers the impacts on its operations by aquatic invasive species, especially infestations by zebra mussels (*Dreissena Polymorpha*), to be critical to the continued economic operation of these facilities.

Recognizing the need for immediate measures to address this problem, in early 1990, the Power Authority instituted monitoring and mitigation programs at a number of our facilities throughout the state. Unfortunately, there are limited effective mitigation options for control of the zebra mussel. The most widely use control method entails the discharge of chemicals (either chlorine or mulluscicides) into the water supply system. In New York State, such discharges require approval from the Department of Environmental Conservation (DEC). This approval generally takes the form of an amendment to the facility's State Pollution Discharge Elimination System (SPDES) permit. Both the Power Authority and the DEC have closely monitored the effectiveness and impacts of these control options.

In May of 1990, we instituted a chlorination program at the 2,400-megawatt Niagara hydropower project in Western New York. The program chlorinates the service-type support systems of the plant, which include the fire protection system, the transformer cooling, and bearing cooling systems. The main flow system utilized for power production at the project is not chlorinated. The initial installation of this system cost over \$100,000 and is currently in the process of being refurbished. Estimated costs to renovate the treatment system and associated controls are expected to approach \$200,000. Annual control efforts are expected range in cost from \$30,000 to \$50,000. A similar chlorination system was also installed at the Authority's 800-megawatt St. Lawrence hydropower project.

To control zebra mussels at the Authority's 1,000-megawatt pumped storage facility at Blenheim-Gilboa in the Catskills, we installed a state of the art experimental copper ion generator in an effort to reduce chemical usage.

At our Hinckley, Crescent, and Vischer Ferry small hydropower facilities within the Mohawk River drainage, we installed both a filtration system for service water systems and use mechanical cleaning. While effective in controlling infestation of critical water systems at these locations, the methods are labor intensive and costly. Moreover, mechanical cleaning must be performed when the plants are shut down.

At the FitzPatrick Nuclear Plant on Lake Ontario, the Authority installed a chlorination system in 1991. This system is also used to treat the service water type support systems of the plant. The cost for implementing the initial chlorination technology was more than \$175,000. Based upon conversations with Entergy Nuclear, the current plant owners, annual expended costs to control fouling from zebra mussels are in the range of \$100,000 to \$150,000. At another former NYPA plant now owned and operated by Entergy, Indian Point Unit No. 3 Nuclear Plant, similar control practices were implemented and now have annual operating costs approaching \$350,000 annually.

Water is essential to the process of generating electricity. In hydropower plants, water is the fuel. In other facilities, water is used to produce the steam that power turbines or used as a coolant in the combustion processes.

The use of Great Lakes water for power production is significant. A 2005 report¹ by the Northeast-Midwest Institute calculates that there are some 535 power plants within the U.S. portion of the Great Lakes basin, having a combined generation capacity of over 50,000 megawatts. Thermal plants comprise about 90% of this generation and include 13 nuclear and 175 coal-fired units.

By interfering with the maximum effective operations of power plants, zebra mussels can jeopardize the reliable supply of electricity. The worst-case impact from Dreissena on Power Authority operations would be the total interruptions of electric

¹ Northeast-Midwest Institute: "Power Plants in the Great Lakes Basin", January, 2005

generation in order to perform mechanical maintenance. It is difficult to accurately quantify the financial impact of a worst case scenario. However, the real economic impact would be felt by customers who would have to be served by alternative power sources. Replacing NYPA hydropower, supplied at wholesale commodity prices in the 1-2 cents per kilowatt-hour range, alternatives are dramatically more expensive, ranging from 5-10 cents per kilowatt-hour.

In 1995, Charles O'Neill, of New York Sea Grant, reported² on the economic impact of zebra mussels. That analysis surveyed infrastructure owners/operators in thirty-five states and three Canadian provinces, including all the Great Lakes States. That analysis showed the mean expenditure for zebra mussel control at nuclear power plants was \$786,670 per facility. The mean expenditure for fossil fuel generating facilities was \$146,620 per facility. These expenditures included plant retrofits, chemical control activities, and prevention projects.

To date, the New York Power Authority, to a large degree, has overcome the initial effects of invasive species on the operations of our facilities, but it has not been without impact to both our operations and costs.

Zebra mussel infestation has presented one of the most daunting environmental challenges for the users of the waters of the Great Lakes and others. Changes to the Great Lakes basin from introductions of invasive species are still yet to be entirely known. Will the introduction of the Round Goby have a detrimental affect on other fish species? Will the fishhook water flea adversely affect the multi-billion dollar sport fishing industry? What new invasive may be on the horizon? Without taking decisive action on the invasive species entering the Great Lakes Basin, detrimental effects will continue. Perhaps even to a greater extent that we have seen in the past.

The New York Power Authority supports efforts on the state and federal levels to regulate and control the exchange of ballast water, as this is clearly the vector of choice in the worldwide movement of aquatic invaders. Continued funding of invasive

² Charles R. O'Neill, Jr, New York Sea Grant: "Economic Impact of Zebra Mussels – Results of the 1995 National Zebra Mussel Information Clearinghouse Study", Great Lakes Research Review, Vol. 3, No. 1, April 1997

monitoring and control programs and the research that augments these programs is essential. Without these efforts it is a certainty that additional invasive species will infect the Great Lakes and their tributaries. Those new species will present new social and economic challenges to power production, industry, recreation, safety and health in Great Lakes communities.

On behalf of the New York Power Authority, I want to express my appreciation to the Chairman and the members of this Subcommittee for their attention to my testimony and the time and energy they are devoting to this significant issue.

Thank you again for the opportunity to contribute to your deliberations. I will be pleased to try to answer any questions.