Clean Ocean Action

www.CleanOceanAction.org

Ocean Advocacy Since 1984

■ **Main Office**
18 Hartshorne Drive
P.O. Box 505, Sandy Hook
Highlands, NJ 07732-0505
Voice: 732-872-0111
Fax: 732-872-8041
SandyHook@CleanOceanAction.org

□ **Institute of Coastal Education**
3419 Pacific Avenue
P.O. Box 1098
Wildwood, NJ 08260-7098
Voice: 609-729-9262
Fax: 609-729-1091
Wildwood@CleanOceanAction.org

Testimony for NJPDES Public Hearing
Ocean County Administrative Building – Toms River, NJ
October 24, 2005

On behalf of Clean Ocean Action, I want to thank you for hosting today's hearing and extending the comment period on the Draft NJDEP's permit for Oyster Creek Nuclear Generating Facility.

Clean Ocean Action's mission is to clean up and protect the marine environment.[1] COA uses scientific research to analyze potential threats to the marine environment and identifies environmentally sound solutions to reduce or eliminate harmful activities. COA works with over 150 organizations and thousands of citizens to implement these solutions through advocacy and civic action.

After careful review of studies describing the ecological harm caused by the once-through cooling system at Oyster Creek and the laws and regulations, as well as the technological advancements that have been achieved in the nuclear power industry, it is clear that the only acceptable, responsible, logical, and appropriate action is to require the plant to retrofit the once-through cooling water system into a closed-loop system. It is time for Oyster Creek Nuclear Generating Station to come into the 21st century and free Barnegat Bay from this obsolete and barbaric system.

Therefore, COA supports NJDEP's #1 Preferred Alternative, which will require the installation of a closed-cycle cooling system. As importantly, COA rejects the second alternative identified by NJDEP in the draft permit as it will not, and indeed cannot, provide the technical controls necessary to address the impacts from the once-through cooling system.

The Impacts:
In order to cool the nuclear reaction and the consequent thermal discharge, the Oyster Creek Facility uses 1.4 million gallons of life-rich estuarine waters.[2] This process not only pollutes the marine waters of Barnegat Bay but also kills very large numbers of marine organisms, as has been shown by studies at the Facility.

From the outset, it is important to note that an extensive scientific literature review has revealed that all available data on impingement (when organisms are pinned against the intake screens) and entrainment (when organisms pass through the screens and are sucked through

[1] Visit www.cleanoceanaction.org for more information.
[2] Assessment of the Impacts of the Oyster Creek Nuclear Generating Station on Kemp's Ridley (*Lepidochelys kempii*), Loggerhead (*Caretta caretta*), and Atlantic Green (*Chelonia mydas*) Sea Turtles. (December 2004), NRC PDR ML# 050060037.

the system) at the plant are the result of studies performed and/or funded by the Oyster Creek Nuclear Generating Station. Even so, the studies document startling results. The facility kills trillions of animals each year, such as blue crabs, striped bass winter flounder, bluefish, blackfish, bay anchovies, menhaden, and many others.[3]

In addition, the death rate of endangered sea turtles continues to increase—specifically, the Kemp's Ridley, which is the most endangered sea turtle.[4] In short, the number one un-natural cause of marine life mortality in all of Barnegat Bay is Exelon's Oyster Creek Nuclear Generating Facility.

Moreover, Exelon's Facility:

- Actually reverses the flow of the southern portion of Forked River to accommodate the water needs of the plant.[5]
- Changes the salinity, water temperature, and dissolved oxygen levels in and around the facility and releases radionuclides that can be detected all the way up the food web.[6]
- Dumps tons of toxic chlorine into the Bay each year at levels that are 20 times the lethal level for marine life, including Striped Bass and even Killies (known by fishermen to be a pretty tough critter).[7]

In today's world with technology, law, and common sense, there is no place for Oyster Creek's once through cooling system. Consider that when this system was under construction in 1965 --- "Dr. Strangelove" was up for an Oscar (My Fair Lady won); Dr. Martin Luther King, Jr. led the Freedom March from Selma to Montgomery, Alabama; the first US 2-man orbit around the world was on Gemini 3; a gallon of gas cost 31 cents; the average cost of a house was $21,000; the first mini-computer was mass marketed - it was the size of a refrigerator, had memory systems totaling 36K, came with its own paper and punch card reader, and cost $18,000; and the Surgeon General's warning "Cigarettes can be hazardous to your health" was added to the packs. Times have changed and technology has vastly improved.

---

[3] A study conducted from September 1975 through August 1977 reported impingement of 13 million fish and invertebrates during this period. A second study conducted from November 1984 through December 1985 reported impingement of 22 million fish and invertebrates (with 7 million impinged in December 1985 alone). A study conducted from September 1975 through August 1977 reported 9.19×10^{13} microzooplankton (<500 µm in size including several species of copepods and clam, snail, worm and barnacle larvae) and 4.24×10^{11} macrozooplankton (>500 µm in size including jellyfish, sand shrimp, grass shrimp, larvae of sandlance and American eels, eggs and larvae of winter flounder, and several crab species.) were entrained during this time period.

[4] Plant records indicate 32 impingement and 14 mortalities of endangered sea turtles since 1992. These data include the following species specific incidents: (a) 21 impinged Kemp's Ridley Sea Turtles with 9 mortalities; (b) 7 impinged Loggerhead Sea Turtles with 2 mortalities; and (c) 4 impinged Green Sea Turtles with 1 mortality. Additionally, in 2004, OCNGS exceeded their annual incidental take when 8 juvenile Kemp's Ridley Sea Turtles were impinged and 3 were killed in the 3 month period from July 4 to September 23. An Incidental Take Assessment by the National Marine Fisheries authorized an annual limit of 4 Kemp's Ridley's (with no more than 3 mortalities), 5 Loggerheads (with no more than 2 mortalities) and 2 Green's (no more than 1 mortality).

[5] M.J. Kennish, (2001) State of the Estuary and Watershed: An Overview. Journal of Coastal Research. SI 32: 243-273.

[6] *Id.*

[7] OCNGS has a permitted daily maximum discharge limit of 0.20 mg/L of chlorine[7] into the discharge canal, 20 times higher than the lethal limit of many estuarine organisms including striped bass, mummichogs and bunker.[7,7] One chlorine related fish kill resulted in the death of 500 Atlantic Menhaden in January of 1974.

Alternative Technologies Exist:
NJDEP's #1 Preferred Alternative, the closed-loop system, could reduce the intake of the water pipeline by more than 95% -- thereby reducing the impacts by more than 95%. For example, a nuclear energy facility on Lake Michigan, the Palisades Nuclear Power Plant, retrofitted their once-through cooling system to a closed-loop system in 1974. The Palisades Plant had a 700-megawatt electrical output at the time (Oyster Creek currently outputs 619 megawatts). Studies on impingement and entrainment were done before and after the retrofit. When the once-through system was still in place, daily records showed a total of 651,712 fish impinged on the traveling screens. After the retrofit, results from the study showed 2,724 fish impinged.[8] This is a 99.6% reduction in the impingement rate.

Furthermore, as an added bonus, the construction of the closed-loop facility will stimulate the local economy by providing numerous jobs.

Exelon has the money and can well afford to build the closed-loop system. Their net income was $514 million and their cash flow from operations roughly $1.4 billon, as of June 2005.

The BAD Option: Alternative #2.
A word about the other option. The NJDEP's draft permit includes a second alternative should the closed-cycle cooling requirement be "unavailable" -- whatever that means. This alternative would require the facility to undergo a restoration project. Alternative 2 is a bad alternative and is, therefore, unacceptable. Restoration projects have not been proven to replace the death toll at, nor reduce the toxic and thermal pollution caused by, once-through cooling systems.

In fact, NJDEP is currently suing the EPA over the legality of restoration as a compliance measure. Accordingly, Commissioner Campbell has stated in a press release on the lawsuit: "[t]his EPA rule [allowing restoration] defies common sense by weakening important standards designed to protect aquatic resources that are critical to our environment and economy."[9] Attorney General Harvey stated, "[t]hese intakes are a serious detriment to aquatic life because they suck in huge volumes of water from bays and rivers – six billion gallons daily from New Jersey's waters … Millions of fish and shellfish, mostly in early life stages, are killed by these intakes, causing serious harm to the marine environment, fish populations and our regional fishing industry."[10]

The federal Clean Water Act allows (and State law requires) DEP to go beyond federal requirements and impose stricter standards (like closed-cycle cooling) where necessary to protect the environment. This point will be further detailed in our written comments. COA's detailed written comments will elaborate on the technical, legal, scientific, and good governance reasons as to why Alternative 2 is an unacceptable choice.

In closing, we have heard tonight that Exelon, one of the largest and richest power companies in the U.S., has stated that it opposes both of the Department's alternatives and will fight the permit. The

---

[8] Benda, Robert S., John Marl & John Gulvas, "Comparison of Fish Impingement at the Palisades Nuclear Power Plant for Once-through and Closed Cycle Cooling," Proceedings of the Indiana Academy of Science, Vol. 85, 1975.
[9] Office of the Attorney General, Dep't of Law & Public Safety News Release "Attorney General Harvey Sues EPA Over Failure to Protect Nation's Waters, Marine Life: Six State Coalition Opposes New Rule for Power Plants" July 26, 2004. Available at http://state.nj.us/lps/newsreleases04/pr20040726a.html.
[10] *Id.*

State must act to protect the interests of its citizens and resources and must take this company head on. NJDEP: finalize the permit with the requirement of the closed-cycle cooling system. Free Barnegat Bay from this old, barbaric machine. Close the loop.

Thank you again,

Cindy Zipf
Executive Director