



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Environmental Regulation

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September 14, 2006

Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulation Commission  
Mail Stop T6-D59  
Washington, DC 20555-0001

RE: **Oyster Creek Nuclear Generating Station  
Generic EIS for License Renewal of Nuclear Plants**

### **Supplemental Comments**

Dear Sir or Madam:

The New Jersey Department of Environmental Protection (NJDEP) has the following supplemental comments on its review of the Draft Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants regarding Oyster Creek Nuclear Generating Station. We offer the following comments, for your consideration, regarding the environmental impacts associated with the proposed renewal of Oyster Creek's operating license. This letter supplements my letter of September 11, 2006.

### **COMMENTS**

#### **Land Use**

The NJDEP's Division of Land Use Regulation (DLUR) review resulted in the following comments.

**Page 4-7, line 1-13, the following statement appears:**

Entrainment of phytoplankton and zooplankton - Based on information in the GEIS, the Commission found that:

Entrainment of phytoplankton and zooplankton has not been found to be a problem at operating nuclear power plants and is not expected to be a problem during the license renewal term.

The NRC staff has not identified any new and significant information during its independent review of the AmerGen ER, the site visit, the scoping process, the review of monitoring programs, or the evaluation of other available information. Therefore, the NRC staff concludes that there would be no problems associated with the entrainment of phytoplankton and zooplankton during the renewal term beyond those discussed in the GEIS.”

It is the DLUR’s understanding the applicant has been conducting entrainment and impingement studies from approximately October 2005 to the present. The DLUR does not understand why this ongoing study does not represent a “new study” and how the NRC can conclude without reviewing the results of the on-going study, “that there would be no problems associated with the entrainment of phytoplankton and zooplankton during the renewal term beyond those discussed in the GEIS.”

**Pages 4-12, Lines 26 & 27; Page 4-12, Lines 36 & 37**

Several places in Chapter 4 indicate that the Summers et. al. (1989) analysis advises that numbers produced by EA studies were underestimated.

It is not obvious, when the GEIS discusses numbers of fish, invertebrates, plankton, etc., whether or not those numbers are based on EA’s underestimated numbers or have been corrected to meet Summers estimates.

**Appendix E**

In Appendix E, there is an evaluation of species requiring Essential Fish Habitat (EFH) consultation. The DLUR offers the following comments on the winter flounder (*Pseudopleuronectes americanus*) evaluation.

The evaluation (E58–59) states, “OCNGS operations have the potential to adversely affect EFH for all life stages of winter flounder because all stages could occur in Barnegat Bay. Tatham et al. (1984) considered the winter flounder a resident species in Barnegat Bay that made significant use of the estuary for spawning and as a nursery area; the years of study (1975 to 1978) reflected a period when commercial landings in New Jersey waters ranged from 47.7 to 92.7 metric tons. These data appear to reflect a low point in the population based on data from 1979 to 2004, when catches usually exceeded 100 metric tons and were greater than 200 metric tons for seven years during that period (NMFS 2005). Winter flounder larvae represented between 1 and 10 percent of the annual OCNGS entrainment measured in studies from 1975 to 1981 (Summers et al. 1989).” ... “The total number of entrainment losses for winter flounder larvae for 1975 to 1976, 1977 to 1978, and 1980 to 1981 was 4330 million organisms (Summers et al. 1989).” ... “Winter flounder are also impinged on the OCNGS traveling screens. Annual impingement of winter flounder from 1975 to

1985 ranged from 8908 individuals in 1975 to 1976, to more than 148,000 individuals from 1978 to 1979, and the average annual impingement was estimated (EA 1986) to be 38,866 individuals during that period.”

The Atlantic States Marine Fisheries Commission (<http://www.asmf.org/>) has published a more recent report (Fishery Management Report No. 43 of the Atlantic States Marine Fisheries Commission Amendment 1 to the Interstate Fishery Management Plan for Inshore Stocks of Winter Flounder November 2005) on winter flounder. This report places New Jersey within the Southern New England/Mid-Atlantic (SNE/MA) Management Area for winter flounder. The report encompasses a large area, including New Jersey. The report states that within the SNE/MA the stock complex is overfished and overfishing is occurring based on updated NEFMC overfishing definitions.

In addition, the report provides the following information. “Commercial landings from the SNE/MA stock unit averaged 8,500 mt from 1964-1972 before declining to around 4,800 mt throughout the mid- to late 1970s. Commercial landings increased in the early 1980s to a record high of 11,176 mt in 1981 and remained at high levels through 1985. Landings rapidly declined after 1985 and reached a record low of 2,200 mt in 1994. Commercial landings in 2001 were 4,400 mt. Landings by distance from shore (<3 miles; 3-12 miles; >3 miles) were unavailable for 1994-1996 because of the switch from the NEFSC’s weigh-out system to the Vessel Trip Reports (logbooks). Commercial landings from the EEZ (>3 miles) averaged 86% of total commercial landings from 1989-1993, and the 2002 stock assessment notes that the majority of commercial landings from the SNE/MA stock continue to come from offshore areas (>3 miles).”

“Recreational landings from the SNE/MA stock complex peaked at 5,772 mt in 1984 before declining to 383 mt in 1992. Since 1992, landings have fluctuated without trend between 290 and 831 mt. In 2001, the recreational landings were estimated at 550 mt. Recreational landings as a percentage of total landings increased from 20% in 1982 to 44% in 1988, then declined to 20% in 1990. Recreational landings as a percentage of total landings have ranged from 10-18% since 1997. On average, recreational landings have comprised 23% of the total landings (1981-2001).”

“In order to restore the stock, the states in the Southern New England/Mid-Atlantic stock area must implement a recreational 12” minimum size limit and a 10-fish creel limit. Each state in the SNE/MA stock area may have a 60-day open season for recreational winter flounder fishing. In addition, 20 days must be closed to recreational winter flounder fishing during March and April. The 60-day open season can be split into no more than two blocks. While recreational fishermen in states within the Gulf of Maine (GOM) Stock must maintain the existing 12” minimum size and adopt an 8-fish creel limit. There are no required recreational closed seasons in the GOM stock area.”

“Commercial fishermen within the Southern New England/Mid-Atlantic stock area must implement a 12” minimum size limit, a minimum 6.5” square or diamond mesh in the cod-end, and maintain any existing seasonal closures. In addition, the mesh size regulation includes a 100 lb. trip limit for winter flounder if smaller mesh is being used. This 100 lb. “mesh trigger” provides for the landing of a small amount of winter flounder as bycatch in smaller-mesh fisheries. While commercial fishermen in the Gulf of Maine stock area must maintain the existing 12” minimum size limit and remain consistent with the adjacent EEZ mesh size regulations. The current mesh size in the EEZ adjacent to the states in the GOM stock area is a 6.5” diamond or square mesh in the cod-end. States must maintain existing season closures, including any Federal rolling closures that affect state waters in the GOM stock area.”

Based on the above, it appears the winter flounder stock is in trouble in the SNE/MA and the Atlantic States Marine Fisheries Commission has taken measures to meet federal rebuilding requirements. This is somewhat of a different picture than presented in the GEIS.

It is interesting to note that Fishery Management Report No. 43, Section 1.4.1.3 entitled “Present Condition of Habitats and Habitat Areas of Particular Concern Status of the Habitat” presents three activities which have been identified as exerting long term deleterious effects on winter flounder and their habitat especially habitat areas of particular concern. They are: 1. Near-shore water quality degradation; 2. Suspended sediments; and 3. Entrainment and impingement from power plants and other activities.”

With regard to entrainment and impingement from power plants and other activities, the Report states: “Several extensive studies have been done on the impact of coastal power plants on winter flounder. Historically, many of these plants have been sited in the upper reaches of the estuaries where many winter flounder populations spawn and nursery. Power plant losses through entrainment and impingement of different life history stages are directly related to several factors: the location of the plant on the estuary, the type of system used for cooling the plant, volume of water used in cooling, and the type of technology employed to reduce mortality. Entrainment impacts are usually associated with egg, larval and juvenile life stages where individuals are small enough to pass through the intake screens and subsequently through the plant. Impingement affects mostly the adult stage, or the individuals large enough to be caught on the intake screens. Impingement mortality is typically lower as technologies have been developed and implemented to allow fish to be diverted from the cooling water and returned to the estuary alive. Mandatory monitoring programs required of the industry to assess the impact these plants have on fisheries resources and the estuarine environment have provided valuable data on winter flounder populations and have led to the development of new technologies to reduce power plant mortality on estuarine species. There are other types of

activities that potentially have similar impacts such as desalinization and water treatment plants.”

Section 5.3 of the report is entitled Recommended (Non-Mandatory) Management Measures. This Section discusses that the recommendations included below correspond to the threats to habitat areas of particular concern outlined in Section 1.4.1 above. State fishery agencies should actively intervene to the extent of their authority to ensure that federal, state, and local permitting agents are aware of the loss in winter flounder productivity associated with water quality degradation and habitat loss and give full consideration to the following recommendations.

Recommendation #3 addresses concerns regarding Impacts by *Power Plants* (in addition water intake from desalinization plants, and water treatment plants). These recommendations include:

”Either encourage closed system plants or assist industrial siting councils in siting new plants to avoid winter flounder spawning areas;

When existing plants renew their permits or upgrade their technology, encourage closed system plants or other best available technology to minimize plant induced mortality.

Assess cooling water entrainment/impingement mortality at existing plants on a stage-specific basis for both local and regional flounder populations and use this information to address these impacts.”

As the evaluation relies on +20 year old impingement and entrainment data, the Division recommends the SEIS be updated to include the most recent findings on the state of winter flounder populations and State and federal government agency requirements and recommendations. In addition, the update should not attempt to minimize impacts by implying the impact is in the millions instead of billions (4330 million = 4.33 billion).

### **Fishery Management Plan**

Given Item No. 5 above, the GEIS should review the Fishery Management Plans for target species to insure the most recent information is utilized in the EFH assessments. The Division recommends review and inclusion of data from the websites of the various fishery management commissions and councils and the National Marine Fisheries Service (NMFS) website (<http://www.nefsc.noaa.gov/nefsc/habitat/efh/#list>) along with the results of the presently on-going impingement/ entrainment studies.

## **Radiation Protection and Release Prevention Element**

The NJDEP's Radiation and Release Prevention Element's (RPRP) review of the GEIS has resulted in the following comments and concerns that are directed to specific impact areas.

### **Plant and the Environment, Bay anchovy (Page 2-35)**

Bay anchovies are one of the most abundant species in Barnegat Bay and are ecologically important in that they serve as a food source for fish. There are no recent population trends for bay anchovies so the impact of Oyster Creek on this ecologically important species cannot be addressed.

### **Plant and the Environment, Blue Crab (Page 2-44)**

Table 2-3 notation says that blue crab are a species known to be affected by the operations of the OCNGS, yet the text says blue crab are at sufficient numbers and 1995 was the largest harvest recorded since 1950. Can you clarify these statements? Are blue crabs impacted by the OCNGS and if so, to what degree?

### **Plant and the Environment, Dramatic decrease in hard clams (Page 2-45)**

What is the number and location of hard clam beds in Barnegat Bay?

### **Plant and the Environment, Submerged aquatic vegetation (Page 2-47)**

Eelgrass represents the most important submerged aquatic vegetation. How will the next dredging of Oyster Creek impact the eelgrass beds and what will be done to minimize the impact? What is the current assessment of the eelgrass beds?

### **Environmental Impacts of Operation, Entrainment of Phytoplankton and Zooplankton (Page 4-7)**

"Entrainment of phytoplankton and zooplankton has not been found to be a problem at operating nuclear power plants and is not expected to be a problem during the license renewal term".

The Draft SEIS fails to mention that the OCNGS has been conducting an entrainment study which began in September 2005. However, this study has not been concluded and the assessment of data has not been completed, therefore how can the statement of "no problem" be made? This issue will be further evaluated through the Department's NJPDES process.

**Clarification on the following previously submitted comment (changes are in bold and strike out under CREST).**

**Plant and the Environment, Radiological Impacts (Page 2-75)**

Following is a clarification of the Department's Environmental Sampling and Monitoring Program (ESMP). Data are collected not only beyond the owner controlled area, but at various locations onsite:

- Groundwater sampling is done within the OCNGS site boundary. Tap water is sampled from the OCNGS site Administration Building
- Direction radiation measurements using Thermoluminescent Dosimeters are taken at various locations within the OCNGS site boundary, including the Independent Spent Fuel Storage facility.
- Continuous Radiological Environmental Surveillance Telemetry – Three **pressurized** ion chamber devices (CREST monitors) measure direct radiation at the Independent Spent Fuel Storage Facility.

**Environmental Justice**

The NJDEP's Environmental Justice Program (EJ) review resulted in the following comments.

**Section 4.4.6 - Environmental Justice**

The NRC staff used data from the 1990 Census to evaluate low-income populations, and data from the 2000 Census to evaluate minority populations within a 50 mile radius from the facility. The EJ Program questions the use of 1990 data to evaluate low-income populations given the fact that 2000 data are available.

The GEIS did not take into consideration the projected explosive population growth and changing demographics in this area of New Jersey in their evaluation of potential adverse impacts on low-income and minority communities for the next 20 years of operation.

The NRC staff concluded that "it found no unusual resource dependencies or practices such as subsistence agriculture, hunting or fishing that would be impacted by OCNGS license renewal." Again, given the time constraint associated with this review, it was difficult to confirm this statement. However, the EJ Program has knowledge that in many areas within the 50 mile-radius evaluated in the EIS, low-income and minority communities are engaged, to a certain extent, in subsistence fishing and farming. So, the pathways through which the environmental impacts associated with OCNGS license renewal can affect human populations need to be reevaluated.

**Section 8 – Alternatives**

The above comments also apply to this section.

Thank you for giving the NJDEP the opportunity to provide these comments on the document.

Sincerely,



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