

**INSTITUTE OF MARINE & COASTAL SCIENCES**

71 DUDLEY ROAD • NEW BRUNSWICK • NEW JERSEY 08901-8521  
TEL: 732-932-6555 • FAX: 732-932-8578 • URL: marine@rutgers.edu

6/16/06

41FR34969

(3)

August 30, 2006

RECEIVED

2006 SEP - 6 PM 4: 13

RULES AND DIRECTIVES  
BRANCH  
10/20/06

Chief, Rules and Directives Branch  
Division of Administrative Services  
Mail Stop T-6D59  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Dear Sir:

Section 4.1 (Environmental Impacts of Operation: Cooling System) of the Generic Environmental Impact Statement (GEIS) regarding the license renewal for the Oyster Creek Nuclear Generating Station (OCNGS) has several major flaws that invalidate its overall conclusions on aquatic ecological effects. Of particular note is the lack of bay population surveys and associated population databases collected during the past 30 years to compare against impingement and entrainment losses of organisms at the OCNGS. Bay population surveys and impingement and entrainment sampling must be conducted concurrently. Without these databases – notably recent databases – there is no way to accurately determine the true impact of the OCNGS on aquatic communities in the bay. The only valid assessment of OCNGS impacts on aquatic populations in Barnegat Bay was conducted during the 1975-1977 period when the last population samples were collected in the bay concurrently with impingement and entrainment samples. The results were reported in the OCNGS 316(a) and (b) Demonstration Report. In addition to relying on old and incomplete data collected 30 years ago, the NRC has failed to take into account the large natural variation in abundance of organisms in the bay, as well as the variation of organisms impinged and entrained at the OCNGS, which can exceed 100-300% annually. Ideally, therefore, population surveys in the bay should be conducted annually, or at least every five years, together with impingement and entrainment sampling. Let me reiterate, the GEIS assessment of cooling system impacts on the aquatic ecology of the bay (Section 4.1) cannot be accurate because population surveys in the bay have not been conducted concurrently with impingement and entrainment sampling at the OCNGS since 1977. Consequently, the conclusions of the GEIS regarding OCNGS impacts on aquatic communities in Barnegat Bay are invalid and irrelevant.

SUNSI Review Complete

F-RIDS = ADM-03  
CC = M. M. M. (MTH2)

Template = ADM-013

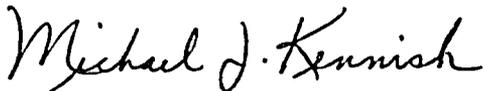
The aforementioned deficiencies call into question several statements advanced by the NRC that marginalize or minimize entrainment and impingement effects. For example, on page 4-15 the statement is made that, "There is no evidence to suggest that past, current, or future entrainment of eggs, larvae, or juvenile forms of these species would destabilize or noticeably alter any important attribute of the resource." Because no population surveys have been conducted since the 1975-1977 period, there is no way this statement can be correct, especially with regard to current losses and probably future losses as well. It certainly cannot be substantiated by the deficient databases that now exist. Furthermore, there is clear evidence of a dramatic decline of both the hard clam (*Mercenaria mercenaria*) and winter flounder (*Pseudopleuronectes americanus*) populations in the bay. Both of these species, with early life stages cropped by the OCNGS, were listed as Representative Important Species in the 316(a) and (b) Demonstration Report submitted to Federal and state government agencies in 1978. These populations in the bay have not been effectively tracked over the past 30 years. The same comments above (albeit for different species) also apply to the following statement on page 4-21 of the GEIS: "There is no evidence to suggest that past, current, or future impingement of these species would destabilize or noticeably alter any important attribute of the resource." The lack of bay surveys during the past three decades, therefore, undermines the fundamental conclusions of the GEIS with regard to minimal impacts of impingement and entrainment of the OCNGS on aquatic populations in the bay.

There is a specific reference to one of my published articles on the Barnegat Bay-Little Egg Harbor Estuary that has been cited three times in the GEIS in support of the NRC conclusions of no significant impact of the OCNGS on Barnegat Bay aquatic populations. The cited work is found on pages 4-15, 4-21, and 4-51 and includes statements taken directly from the following publication (Kennish, M. J. 2001. State of the Estuary and Watershed: An Overview. *Journal of Coastal Research*, Special Issue 32, pp. 243-273.). I want to stress that this cited work is a review article, and the words quoted in the GEIS are taken out of context, thereby misconstruing the information. More specifically, my article only supports the results of impingement, entrainment, and thermal discharge effects determined for the 1975-1977 period, the only period when impingement and entrainment data were collected concurrently with data population surveys in the bay. Thus, it is only relevant to a very small window of time – the two year period from 1975-1977 – rather than to the entire operating period of the OCNGS (1969-Present). Therefore, I object to, and contend, the use of the three quotes from my published article in the context shown on pages 4-15, 4-21, and 4-51 of the GEIS.

The GEIS also infers that more recent findings from an extensive review of available published information (academic journals or other sources) by the NRC staff did not contradict the agency's finding of no significant OCNGS impacts on aquatic populations in the bay. However, there have been few studies published in peer-reviewed journals which deal with OCNGS biotic impacts in any form during the past two or three decades. It is incumbent on the NRC, therefore, to document and list for public examination the published academic journal articles that it notes support the findings of the GEIS regarding the lack of significant biotic impacts of the OCNGS. The NRC should not only list the titles of the published articles but also the journal names and authors, and the relevant page numbers. I have already indicated that my publications relevant to this issue are review articles addressing findings of the 316(a) and (b) Demonstration published nearly 30 years ago.

Finally, and perhaps most importantly, the GEIS has not been reviewed and assessed by a reputable independent scientific body such as the National Academy of Science. If a scientific committee of the National Academy of Science had been solicited to review the sampling design and procedures of AmerGen and previous plant owners and allowed to submit recommendations of a new sampling plan, the flaws recounted above in the aquatic environmental databases of the OCNGS could have been circumvented. The lack of an external review of the GEIS by an independent scientific body creates skepticism not only in the scientific community but also in the lay community. The credibility of the GEIS and the NRC effort related to the license renewal process of the OCNGS really depends on an acknowledged objective and effective review by a credible independent body not affiliated with AmerGen or any government agency. Such a review is necessary to ensure scientific rigor of the licensing process. The NRC's work on the OCNGS will not be accepted or approved by the scientific community without such an external review.

Sincerely,



Michael J. Kennish, Ph.D.  
Associate Research Professor  
Institute of Marine and Coastal Sciences  
Rutgers University  
New Brunswick, New Jersey 08901