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To: <oystercreekeis@nrc.gov>
Date: 09/08/2006 2:27:15 PM
Subject: Fwd:

To Whom It May Concern:

I am sending these comments and three attachments on behalf of Julia L. Huff, Esq. The attachments will be separated.

CC: "Julia Huff" <juliahuff@yahoo.com>

6/16/06

41 FR 34969

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September 8, 2006

VIA EMAIL AND U.S. MAIL

Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, D.C. 20555-0001
Oyster CreekEIS@nrc.gov

**Subject: NUREG-1437: Generic Environmental Impact Statement for License
Renewal of Nuclear Plants, Supplement 28, Regarding Oyster Creek
Nuclear Generating Station Draft Report for Comment**

Please accept these written comments of Nuclear Information and Resource Service, Jersey Shore Nuclear Watch, Inc., Grandmothers, Mothers and More for Energy Safety, New Jersey Public Interest Research Group, Environment New Jersey, New Jersey Sierra Club, New Jersey Environmental Federation, and Save Barnegat Bay (the "Coalition") on the above-referenced Draft Environmental Impact Statement ("DEIS") for Oyster Creek Nuclear Generating Station in Forked River, NJ ("Facility"). Many of the afore-mentioned groups have submitted a separate comment letter specifically with respect to safety and security issues. NRC should consider and respond to both sets of comments, as they are complementary and not duplicative.

The operation of Oyster Creek Nuclear Generating Station near the shores of Barnegat Bay is a matter of great public concern. The Bay is a public resource that is valued by the community for its wildlife, aesthetic values, and for fishing, boating and other recreational activities. Millions of dollars in public resources have been devoted to restoring the ecological health of the Bay. In 1987, Congress recognized the vital importance of estuaries and amended the Clean Water Act to create the National Estuary Program ("Program"). Clean Water Act § 320, 33 U.S.C. § 1330. In 1995, the Administrator of the Environmental Protection Agency accepted Barnegat Bay into the Program. Today, Barnegat Bay is one of 28 estuaries of "national significance."

In addition to its location near the Bay, the Facility is situated within the Pinelands Preservation Area. It is classified as a United States Biosphere Reserve and in 1978 it was established by Congress as the country's first National Reserve. This internationally important ecological region is 1.1 million acres in size and occupies 22% of New Jersey's land area. It is the largest body of open space on the Mid-Atlantic seaboard between Richmond, Virginia and Boston, Massachusetts and is underlain by aquifers containing 17 trillion gallons of some of the

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purest water in the land. These aquifers provide virtually all of the drinking water for the residents of southern New Jersey.

From the time construction began in the mid-1960s, when the local ecosystem was destroyed to make way for the Facility and its intake and discharge canals, to the present day, the Facility has had a significant, adverse affect on the environment. Because the DEIS fails to properly assess baseline conditions prior to construction of the Facility, the No Action Alternative is inadequately portrayed and analyzed. If the adverse impacts caused by the Facility were properly analyzed, and then compared to a proper assessment of the No Action Alternative, there would be no way to avoid the conclusion that operating the Facility harms, and will continue to harm, the environment. The statement of the purpose and need for the proposed action reveals much about the NRC's attitude toward the Facility. The purpose of the action is to maintain the status quo, regardless of the costs or the consequences. This flies in the face of the purposes and goals of the National Environmental Policy Act ("NEPA"). The DEIS disregards the many known adverse affects and essentially parrots the information provided to the NRC by the applicant. As a result, the NRC has failed to take the requisite hard look at the proposed action. In addition, the DEIS perpetuates inaccuracies presented by the applicant with respect to the impact on the aquatic environment, going so far as to misrepresent the conclusions of studies cited. Not only does NRC misrepresent the studies cited, it fails to acknowledge the fact that the studies cited do not support the conclusion reached by the agency that the proposed action would have only a small impact on the environment. NRC also incorrectly analyzes the applicability of the EPA's Phase II rules regarding cooling water intake structures. Finally, NRC unreasonably relies on the incorrect analysis forwarded by the New Jersey DEP in the draft NJPDES permit and incorporates those preliminary conclusions, conclusions that have been heavily criticized and not finalized, into the DEIS. For all of these reasons, as well as a host of specific comments and questions raised in this letter, NRC should not and cannot make any conclusions about either the environmental impact associated with the proposed relicensing of the Facility or the license renewal application. Therefore, NRC cannot finalize the EIS and must prepare a new draft that addresses the inadequacies raised in this letter and submit it for public comment. Until a proper EIS is prepared and reviewed, NRC should not make any decisions with respect to the relicensing of Oyster Creek. To do otherwise would constitute an impermissible, irrevocable commitment of resources in violation of NEPA.

The Purpose and Need Section Defines the Purpose and Need of the Proposed Action Exclusively From Oyster Creek's Perspective, Foreclosing an Analysis of a Reasonable Range of Alternatives

NRC defines the purpose and need of the proposed action as merely providing an option of keeping a nuclear power plant online. DEIS at 1-8. NRC's decision to define the purpose and need for the project exclusively from Oyster Creek's perspective, making renewal of the license a foregone conclusion, is contrary to NEPA regulations and thirty-five years of NEPA jurisprudence.

Because the stated purpose and need of a federal action determines the range and analysis of alternatives, NRC's failure to properly define the purpose and need makes proper consideration of alternatives impossible. See City of New York v. Dep't of Transportation, 715 F.2d 732, 743 (2nd Cir. 1983) (it is arbitrary for an agency "to narrow the objective of its action artificially and thereby circumvent the requirement that relevant alternatives be considered."); see also, Citizens Against Burlington, Inc. v. Busey, 938 F.2d 190, 196 (D.C. Cir. 1991) ("an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality.").

NRC defined the purpose and need exclusively from Oyster Creek's perspective, as simply issuing a renewal of an operating license. NRC appears to be equating Oyster Creek's corporate goals with its own objectives. While the goals of a private party applicant are, to a limited extent, relevant in determining a project's purpose and need, "[m]ore importantly, an agency should always consider the views of Congress, expressed, to the extent that the agency can determine them, in the agency's statutory authorization to act, as well as in other Congressional directives." Citizens Against Burlington, 938 F.2d at 196.

Coupled with NEPA's mandate to act as stewards for present and future generation, see 42 U.S.C. § 4331(a) (2005), it is impossible for NRC to equate its statutory objectives with Oyster Creek's goal of maximizing profits on behalf of its shareholders. NRC cannot fulfill its NEPA obligations by simply looking to what is most convenient and profitable for Oyster Creek. See Van Abbema v. Fornell, 807 F.2d 633, 638 (7th Cir. 1986) ("the evaluation of 'alternatives' mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals."). NRC's narrowly defined purpose and need is arbitrary, capricious, an abuse of discretion and otherwise not in accordance with law, as it precludes any analysis of a reasonable range of alternatives (impermissibly rendering the result in this case a "foreordained formality."

One of the purposes of NEPA was to "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." 42 U.S.C. § 4321. The DEIS does nothing to forward those goals, as it suggests in the statement of purpose and need that the goal is to keep the Facility as an option for the State of New Jersey. There is no effort to prevent or eliminate damage to the environment. Further, the DEIS, which is riddled with flawed data, misrepresentations and bereft of any comprehensive information about the ecosystem directly impacted by the Facility, also fails to promote another of the goals of NEPA, namely to enrich the understanding of the ecological systems and natural resources important to the Nation." Id.

The DEIS Is Riddled with Inaccuracies and Misrepresentations

Another fundamental flaw of the DEIS is that the NRC appears to have simply regurgitated information supplied to it by the applicant and never confirms the veracity of the information. As a result, misrepresentations and inaccuracies have been interwoven and form the backbone of NRC's conclusions in the DEIS.

First, the impingement and entrainment losses documented over the years by AmerGen are virtually meaningless in the absence of Bay population surveys and associated population databases collected over the past 30 years against which the Facility-based losses can be compared. Without that basis for comparison, both NRC and AmerGen are unable to arrive at any conclusions about the affect the Facility is having on the environment. Nowhere is this made more apparent than is section 2.2.5.3 of the DEIS. For virtually all of the species selected by NRC to discussion, the DEIS states that there are no population abundance data or trends. Professor Michael Kennish also points out this flaw in the DEIS in his testimony on July 12, 2006. Without this information, NRC and the Facility cannot determine the true impact of the Facility on aquatic communities in the bay. The only defensible assessment of the Facility's affect on Bay populations took place in the late 1970s, when the last population samples were collected in the Bay concurrently with impingement and entrainment samples. This assessment was made as part of the Facility's required Clean Water Act Section 316 Demonstration, and itself has flaws that are documented in the attached comment letter, which letter is incorporated herein and is to be made part of the record. In the case of the DEIS, not only has NRC relied on old and incomplete data, it completely fails to take into account the tremendous natural variation in the abundance of aquatic organisms in the Bay, as well as the natural variation in those organisms impinged and entrained by the Facility. Professor Kennish has noted that this natural variation can exceed 200-300% annually. See Kennish July 12, 2006 Testimony at 72:1-5. To rectify the information deficit, and thereby allowing any regulator to arrive at defensible conclusions as to the impact the Facility is having on the environment, population surveys in the Bay should be conducted annually, or at least every five years, together with impingement and entrainment sampling. Id. In the absence of this information, the assessment of the cooling water intake system affects on the environment, as described in Section 4.1 of the DEIS are simply inaccurate. Therefore, NRC's conclusions in the DEIS regarding the Facility's impacts on aquatic communities in Barnegat Bay are invalid.

In addition to this fundamental flaw, there are several, particular statements and conclusions by NRC that are questionable, at best. In each case, NRC is attempting to minimize the affects of entrainment and impingement of aquatic organisms. For example, in Section 4.1.1 (page 4-15), NRC states: "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." However, for the reasons articulated in the preceding paragraph regarding the absence of Bay population surveys, this statement is unfounded and incorrect. This statement is particularly problematic in the NRC is purported to extrapolate from the current situation and make conclusions about what is likely to happen in the future. NRC cannot point to any data or studies cited in the DEIS that support this statement.

Not only can NRC not point to any data that supports those conclusions, the data we do have for at least two of the Representative Important Species identified in the Section 316 Demonstration, the hard clam (*Mercenaria mercenaria*) and winter flounder (*Pseudopleuronectes americanus*), evidences a dramatic decline in those populations in the Bay. In another example, NRC comes to the same faulty conclusion on page 4-21 of the DEIS: "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." Thus, NRC's cannot support its conclusions in the DEIS with respect to the impingement and entrainment effects of the Facility without data from Bay surveys conducted during the past three decades.

In what could possibly be described as NRC's failure to rigorously review the information provided to it by the applicant, NRC misrepresents a statement made by Professor Kennish in one of his published articles on the Barnegat Bay-Little Egg Harbor Estuary. Professor Kennish's work is misrepresented three times in the DEIS—and it is done in such a way so as to support NRC's conclusion that the Facility is not having a significant impact on aquatic populations in Barnegat Bay. The error occurs on pages 4-15, 4-21, and 4-51 and includes statements taken directly from Kennish, M. J. 2001. State of the Estuary and Watershed: An Overview. *Journal of Coastal Research*, Special Issue 32, pp. 243-273. As Professor Kennish pointed out in his July 16, 2006 testimony, the cited work is a review of earlier studies conducted on Bay populations. Professor Kennish's conclusions as to the affect the Facility is having on the Bay are valid only with respect to the two-year period from 1975-1977. These conclusions are not valid as to the entire operating period of the Facility and cannot be cited for that proposition.

In what appears to be yet another example of an incomplete review by NRC staff of the information provided by the applicant, NRC suggests in the DEIS that there are a number of studies reviewed by NRC that do not contradict NRC's findings with respect to the affect of the Facility on the aquatic populations in the Bay. First, it is irrelevant whether recent studies do not contradict NRC's findings—as the lack of a contradiction should not be construed in any way as support. Second, and more troubling, is that few studies have been published recently (the past 20-30 years) in peer-reviewed journals that deal with the Facility's impact on aquatic. NRC fails to cite to these studies, and thus the public is unable to discern whether NRC even reviewed those studies, let alone comment meaningfully on the NRC's conclusions.

A troubling trend with respect to the Facility has been to ignore the negative impacts the Facility has on the Bay and the area immediately surrounding the Facility, and focus on restoring other areas. This concept was *proposed* by the NJDEP in the draft NJPDES permit, and NRC (as well as AmerGen) has gravitated to this option because it essentially allows AmerGen to continue to operate with impunity and externalize what should arguably be internalized by the Facility. Not only is this option problematic from the standpoint that it allows AmerGen to maintain the status quo, it suggests that regulators are reading out of the Clean Water Act the requirement that facility's using cooling water intake structures reduce impingement and entrainment impacts by implementing performance standards. In fact, EPA's efforts to downplay this requirement in the Phase I rules (with respect to new facilities) and allow for

restoration in lieu of operational changes was challenged in court and that provision was ruled to be in violation of the Clean Water Act. A similar challenge was brought against an identical provision in the Phase II rules, and the Second Circuit is likely to find that the provision of the Phase II rules also violates the CWA.

In the case of the DEIS, NRC has considered as one of the alternatives that the Facility would continue to operate using its antiquated once through cooling water intake system, "modified" by restoration efforts. DEIS Section 8.1.2. This approach is not only misguided for the reasons stated in the preceding paragraph (and more fully explained in the attached NJPDES comment letter and letter to the NJDEP), but also because it is based on a flawed or incomplete understanding of the Bay. First, for the reasons set out earlier in this comment letter, the status of Bay populations is unknown. Until that information is obtained, there can be no way to know what type of remedial or restorative measures should be undertaken to offset impingement and entrainment losses, assuming for purposes of argument that such an effect can be achieved in the first instance.

Second, the DEIS essentially assumes that coastal wetlands should be restored in an effort to offset the impingement and entrainment losses, but that assumption appears to be based on generalized information about the loss of coastal wetlands, and not connected in any way to actually restoring habitat that fosters the types of species adversely affected by the Facility. On page 2-31 of the DEIS, NRC cites to a study by Hartig and Gornitz in support of its conclusions about the loss of coastal wetlands. This study relates to Jamaica Bay, which is a completely different system. It is inappropriate to use this study to extrapolate both positive and negative benefits associated with restoration.

The general loss of salt marsh along the eastern seaboard is due to sea level rise exceeding the rate of sediment and organic matter accumulation or accretion on the salt marsh surface. The sea level rise is most likely related to global warming trends. This is a problem that poses a long-term threat to most salt marsh systems. Some systems are maintaining their position, however, because of rapid accretion. The loss of salt marsh in the Barnegat Bay-Little Egg Harbor system appears to be relatively minimal over the past 30 years since the federal government, and later the State government, began protecting wetlands.

Contrary to the suggestion in Section 2 of the DEIS, every bay and its associated wetlands areas are different. It is inappropriate to compare Jamaica Bay to the Barnegat Bay-Little Egg Harbor system. Development and other human activities around Jamaica Bay have been dramatic, even relatively recently, which is an important point of differentiation between the two systems. Some bays are surrounded by submerging shorelines related to excess removal of groundwater or oil and gas (for example Galveston Bay in Texas), while others are emerging due to isostatic rebound over the past 10,000 years in response to melting of continental glaciers from the last major glacial period (bays and shorelines in the northeastern part of the country).

The other study cited in Section 2.2.5.1., by the Global Land Cover Facility, does not demonstrate that the wetlands in Barnegat Bay are being impacted in the manner suggested by

the DEIS. Instead, a better source of information is Lathrop, R. G. and J. A. Bognar. 2001, Habitat loss and alteration in the Barnegat Bay region, in M. J. Kennish (editor), Barnegat Bay-Little Egg Harbor, New Jersey: Estuary and watershed assessment. Special Issue 32, Journal of Coastal Research, pp. 212-228. The Barnegat Bay system lost about 4,190 hectares (~27%) of its salt marsh habitat over the century period from 1870 to 1970 primarily due to development, but also due in part to mosquito ditching. Since 1970, however, the loss has been minimal with estimates of about a 1-1.5% additional loss over the past three decades. The Wetlands Act has been critical to this stabilization. The current loss of salt marsh is very small in the system, and in fact there are some areas, most notably in the vicinity of Barnegat Inlet, where the salt marsh area has actually increased according to the authors. In conclusion, they state the following (p. 224): "The Wetlands Act of 1970 appears to have been largely successful in halting the high rate of loss of tidal salt marsh habitats due to human development." Lathrop, R. G. and J. A. Bognar. 2001, Habitat loss and alteration in the Barnegat Bay region, in M. J. Kennish (editor), Barnegat Bay-Little Egg Harbor, New Jersey: Estuary and watershed assessment. Special Issue 32, Journal of Coastal Research, pp. 212-228 at 224. By way of comparison, other nearby states in the Mid-Atlantic region (e.g., Delaware) show the same steep decline in salt marsh habitat prior to the Wetlands Act and then more recent stabilization since 1970. The fact that the tidal marshes along the Barnegat Bay-Little Egg Harbor Estuary appear to be stable, however, in no way suggests that there hasn't been any loss, or that restoring these areas would not benefit the Bay. Kennish, M. J. 2001. Coastal salt marsh systems: a review of anthropogenic impacts. Journal of Coastal Research 17: 731-748. While the members of the Coalition firmly believe that we must vigilantly protect our salt marshes, allowing the Facility to "mitigate" its harmful affects on the environment by essentially writing a check and restoring other land does not address all of the problems caused by the Facility and does not satisfy the requirements of the CWA.

In the case of the Facility, the emphasis should be on aquatic habitats and communities right in the Bay itself for remediation. This has not been done in the DEIS, and cannot be done, because there is a dearth of information to even allow an effective restoration program to be developed. Until the necessary information exists to design the restoration rationally and then assess the impacts of this "alternative," it cannot be properly analyzed and considered as such.

In addition to the lack of information about the Bay populations, a review of the DEIS makes it clear that there is no thorough, pre-construction baseline from which to determine the impacts of the Facility. The 1974 Final Environmental Statement was completed after the Facility had been operating for 5 years, and as such cannot be used as a baseline. Data collected in the late 1960s would have been affected by the construction of the Facility which had already begun, and would also be skewed. Finally, this document is not readily available to the public and appears to be only available by making a Freedom of Information Act request.

Specific Comments and Questions on the DEIS

In addition to the broader concerns discussed above, our review of the DEIS also gives rise to the following specific comments and questions:

2.1.3 Cooling-and Auxiliary-Water Systems

- This section of the DEIS appears to be based in large measure on the draft NJPDES permit issued for comment by the NJDEP. As such, NRC should consider the attached comments to the draft permit. It appears NRC used the draft permit as the basis for determining the scope of alternatives to be considered the DEIS.

2.1.4.1. Liquid Waste Processing Systems and Effluent Controls

- The DEIS states that the Facility has not *routinely* released liquid wastes since 1980s. (2-10). However, the release of these wastes is still potentially part of operations and should be considered in the course of ascertaining impacts to the environment.
- Because tritium was released in 2000 (2-11), NRC cannot assume that plant operates without releases of this nature as a possibility. Did NRC factor future releases into its analysis?
- Does NRC take the position that simply because gaseous releases are covered by a permit, that there is no impact? (2-12)
- Does NRC take the position that simply because the use of herbicides to maintain the transmission lines is permitted, that there is no impact? (2-16) Did NRC consider the ongoing impact of the use of these poisons on the water, plant and wildlife on or near the Facility?

2.2.1. Land Use

- The DEIS references (2-18) the CZMA inconsistency determination reached by NJDEP on August 19, 2005 and states that the determination was made based on a lack of information. The CZMA determination did point out the places in which no determination could be made because of a lack of information, but the NJDEP also made separate findings of inconsistency and highlighted several major issues. Specifically, the NJDEP found that the applicant was not in compliance with Basic Coastal Policy 5 and the Public Access to Waterfront Rule. August 19, 2005 CZMA Determination at 10.

2.2.2 Water Use

- Why is the creation of the 1963 dam created for fire water storage not factored into the 1974 FES? Based on references in the DEIS, it is only discussed in a NJDEP 2005a report. (2-19)
- Why did NRC stop its review of water quantity issues at 2000? (2-20) Paper records are available from the NJDEP prior to 2000 and should be reviewed for purposes of determining impacts.

2.2.3. Water Quality

- The existence of a permit does not mean there is no impact to the environment. The benefit of NEPA is that it allows a decision maker to review cumulative impacts, whereas individual, departmental regulators often do not have the ability to make those cumulative impact determinations. In addition, the Facility does not have a perfect compliance record, which should affect the discussion of impacts. Indeed, the NJDEP fined the Facility \$35,000 for violating its permit and causing a fish kill in January 2006. Moreover, the January 2006 incident was not the first instance of fish kills caused by the Facility.
- With respect to water quality, NRC did not appear (2-21) to review data prior to 2000. What is the justification for this?
- There are more than 100 areas of concern (2-22) at the Facility. Where does NRC consider the past impacts that led to contamination at over 100 places at the Facility with respect to whether an additional 20 years of operation will have an impact on the environment?
- The DEIS reveals that the confined aquifer containment was breached when the reactor was constructed. A 1986 tank spill led to contamination of the aquifer. Groundwater is primary source of drinking water in this area of NJ. Where does NRC consider future impacts to groundwater, in the face of growing water shortages and increased water demand, based on past harm?

2.2.5.3. Important Fish and Shellfish near OCNCS

- The studies referenced in this section are limited to 3 year period, and were conducted post-operation of the Facility and nearly 10 years after construction began. In addition, there were collected from western Barnegat Bay and do not represent a full Barnegat Bay study.
- There are no recent population trends for bay anchovy. (2-36). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- With respect to the American eel (2-36), it is a catadromous species. The current abundance of American eel is unknown. The dam may be restricting upstream migration. This species was not evaluated in the 316(b) study. The fishery appears to be in decline, and FWS is engaged in a status review. FWS has already determined that a listing may be warranted, and the 12 month finding required under the ESA is due. What consideration does NRC give to the impacts another 20 years of operation will have on this species?
- There are no recent population trends for four-spined stickleback (2-37). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no recent population trends for menhaden – only catch information. Indeed, the catch is down. (2-38). How can NRC make conclusions about the impact of the Facility in the absence of this information?

- There are no recent population trends for weakfish, and the population appears to be overfished. (2-39). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no recent population trends for spot; the condition of the stock is unknown. (2-39) How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no recent population trends for Atlantic silverside. (2-40). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- The size of the striped bass population in the Bay is unknown. (2-41). Because of the stock's decline, resource management actions were necessary. How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no recent population trends for bluefish – only landing data. The stock had to be rebuilt. (2-42). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no recent population trends for winter flounder, but there is a FMP for the species. It is considered overfished and EFH has been determined. (2-43). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no recent population trends for northern pipefish. (2-44). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- Commercial landing data is available for blue crab (2-44), but this not the same as overall population levels or abundance. Just because there are recreational crabbers, that does not mean that the population can sustain both fisheries. NRC's conclusion with regard to what the population can withstand is unfounded. How can NRC make conclusions about the impact of the Facility in the absence of this information?
- There are no population estimates available for shrimp. (2-45). How can NRC make conclusions about the impact of the Facility in the absence of this information?
- It is unclear if there are recent population trends for hard clams. The harvest has dramatically declined. (2-45). How can NRC make conclusions about the impact of the Facility in the absence of this information?

2.2.5.4 Other Important Aquatic Resources Near OCNGS

- The DEIS reports that benthic infauna declined from 1969-1973 (2-48). The DEIS says that it is not possible to determine whether the Facility is a contributor to the decline, but does not cite any authority for this conclusion. What is NRC's authority for this conclusion? Localized impacts have been documented. Mobile epifauna inhabit the Bay, but the current abundance has not been estimated with any precision. (2-49)
- No recent investigations of zooplankton abundance have been conducted. They were only done in 1975-77. (2-49) How can NRC make any conclusions about impact to the environment without this data?

2.2.5.5 Threatened or Endangered Aquatic Species

- Loggerheads (2-51) population estimated at 44,780. The DEIS cites CCC 2005. CCC 2005 states that the population estimate is 44,560 nesting females, and includes the following caveat: "Please understand that world wide population numbers for sea turtle species do not exist and that these are estimates of the number of nesting females based on nesting beach monitoring reports and publications."
<http://www.cccturtle.org/loggerhead.htm> accessed August 31, 2006. Does NRC factor the uncertainty into its conclusions about the populations?
- Kemp's Ridley sea turtle are the world's most endangered sea turtle (2-51). No population numbers exist. However, even while NMFS was concluding its consultation with NRC in 2005, two additional Kemp's Ridelys were at the Facility in July 2005. Why is this information not presented? NRC reinitiated consultation with NMFS in June 2006, but that is not reflected here. Has NRC failed to consider that the Facility continues to take endangered sea turtles?
- With respect to Leatherbacks (2-52), the DEIS cites Pritchard data from 1983 and estimates females at 100,000. This data is over 20 years old. The CCC number is not supported with any data, and contains caveat that "world wide population numbers for sea turtle species do not exist and that these are estimates of the number of nesting females based on nesting beach monitoring reports and publications."
<http://www.cccturtle.org/leatherback.htm> accessed August 31, 2006. How can NRC make any conclusions about Leatherbacks without this information?
- With respect to Green sea turtles (2-53), the CCC numbers cited also have the same caveat: "Please understand that world wide population numbers for sea turtle species do not exist and that these are estimates of the number of nesting females based on nesting beach monitoring reports and publications." <http://www.cccturtle.org/green.htm> accessed August 31, 2006. Again, how can NRC arrive at conclusions about the impacts under these circumstances?

2.2.6.2 Threatened or Endangered Terrestrial Species

- The list of threatened and endangered species appears only to relate to federal species, with mention made of corresponding state listing status. Why are state listed species not considered (2-59)?
- The DEIS notes that (2-57) waterfowl congregate around open water created by thermal discharge plume. Is this a good thing? How does this change or affect migratory patterns? Is this not an impact?
- With respect to bog asphodel (2-69), the DEIS says it is not likely to occur on the site. But it occurs within 1.3 miles of the site. NRC fails to articulate how the habitat 1.3 miles away from a 800 acre site can be so different that the species is not present on the site. The same comment applies to swamp pink (2-68), Knieskern's Beaked-Rush (2-60), and chaffseed (2-70).

- The site is suitable for bog turtle (2-71). Were impacts to this species considered? If so, what was NRC's conclusion?

2.2.7. Radiological Impacts

- Why does NRC only consider the monitoring results from 2000-2004 (2-74)? In light of the fact that there have been past releases by the Facility, how can NRC justify reviewing only 4 years of data from a facility that has been in operation for 40 years for purposes of determining whether another 20 years is warranted? In addition to pre-2000 data, post-2004 data should also have been considered.
- With respect to Cesium-137, its presence is attributed to historical releases, and it has been consistently detected. In addition, it has been observed in the teeth of children who live close to the plant. Isn't it likely that it will continue to be detected? Isn't it possible that during the license renewal period, other releases could occur? Why is that possibility not considered?

2.2.8 Socioeconomic

- How can NRC draw any conclusions with respect to archaeological resources when no study was completed prior to construction? The DEIS suggests that there is some dispute as to the presence of historic resources on the site.

4.1 Cooling System

- Why is there no discussion of the conflicts associated with the Facility's use of Forked River and Oyster Creek and other uses by the public or by wildlife?
- With respect to entrainment information, the DEIS fails to note or acknowledge that the status of populations in Barnegat Bay is unknown, and thus, it is impossible to make conclusions about the impact the once through cooling system is having on the Bay. Professor Michael Kennish's testimony at the July 12, 2006 public hearing highlights this problem, and it is discussed thoroughly elsewhere in this comment letter.

4.1.1 Entrainment

- On page 4-10 (lines 35-39) what articles support this conclusion? The DEIS fails to cite any support for this conclusion.
- On line 31 at page 4-11, there is a discussion about mitigation, but the assumptions about the Phase II rules is incorrect. NRC should review the attached comments on the draft NDPES permit and the attached letter to Commissioner Jackson on this point, both of which are incorporated herein and are to be considered part of the record.
- On page 4-12 at line 27, the DEIS cites estimates based on 1975-76 numbers, but populations fluctuate (see testimony of Michael Kennish, Ph.D.). The entrainment was measured at the discharge canal, but there were no corresponding studies in the Bay.

This problem, coupled with the possible underestimation in the original study (4-12, line 27), calls into question this conclusion.

- On page 4-14, NRC only evaluated the conclusions drawn by others, but did not do any independent assessment; therefore, all of the flaws in the original data or those studies have become part of the DEIS.
- The DEIS states that there are no obvious changes in communities in the Bay, but the data collection stopped in 1981. How can NRC justify or support this conclusion?
- The DEIS references the fact that the applicant has recently resumed intake sampling again in 2005. However, this is not adequate for concluding that the impact is small and is meaningless without comprehensive data about the populations in the Bay.
- On page 4-15 (lines 34-38), the NRC misrepresents Michael Kennish's conclusions.

4.1.2 Fish/shellfish entrainment

- Which articles support these conclusions? The DEIS fails to cite any authority.
- NRC fails to discuss how the problems with impingement number estimates affect its conclusions as to impacts.
- Professor Kennish is misrepresented on page 4-21 (lines 36-38)

4.1.3 Heat Shock

- See comments to NJPDES draft permit for a thorough critique of the thermal discharge from the Facility.

4.4 Socioeconomic Impacts

- NRC concludes that there are no impacts since the 1996 GEIS was prepared (4-32). How can this be, when the GEIS referred to is 10 years old? Ocean County has had significant population growth and increased traffic. Have there been any changes to the evacuation plan? Did NRC consider expected population growth during the relicensing period and how that growth impacts already stale findings from 1996 regarding evacuation and other impacts?

4.6 Threatened or Endangered Species

- On page 4-44, NRC essentially concludes that the impacts to species are small, because FWS concluded that the project would not adversely affect federally listed species. Is NRC confusing the jeopardy standard under Section 7 of the ESA with the requirements of NEPA? We know the Facility is adversely affecting species, because it is killing and injuring some of the world's most endangered sea turtles.

- In section 4.6.2, NRC makes a conclusion that terrestrial species impact is small. However, FWS recommended a survey. Why was this survey not completed before the DEIS was prepared and NRC reached its conclusions about impacts?

4.7 Evaluation of New and Potentially Significant Information

- On page 4-48, there is a discussion about the fire dam and its impact on shad. NRC does not discuss the possibility that shad are not using the creek because the creek was essentially destroyed in 1965 when the Facility began construction. There were no studies done prior to this to establish the baseline, so NRC and the applicant cannot conclude that there is no impact. The pond for firefighting will continue to exist because of the dam. If the license is not renewed, the dam could be removed and the pond water returned to the creek; therefore, the pond is affected by the decision to renew the license and should be considered. Indeed, the no-action alternative should review the positive environmental impacts of dam removal.
- How can NRC conclude that there are only minor effects in Barnegat Bay (4-48) when the DEIS, and all of the data submitted by the applicant to NRC is riddled with errors, flaws, and the significant omissions highlighted earlier in this comment letter? There are no baseline studies and no population numbers; therefore, NRC cannot reach this conclusion.

4.8. Cumulative Impacts

- There have been no continuous studies to monitor the Bay populations. These studies could and should have been done. Updates performed now cannot be the basis for a determination that there are no cumulative impacts. The ecosystem was destroyed. NRC is unable to substantiate the conclusion that the impacts are localized (4-50). There is no question that the amount of freshwater that reaches the Bay has changed and will continue to be affected as long as the license is in place. The volume of freshwater that enters this system is critical, in light of the fact that this is a system that does not flush frequently.
- While there may be insufficient evidence to definitively prove that the operation of the Facility's cooling system is altering the ecosystem, there is no evidence whatsoever to suggest that the Facility's archaic once through cooling system is not having a large impact on the ecosystem. Taken at face value – the volume of water used, the impingement and entrainment data, the increasing takes of sea turtles, and the crash of fish stocks, the Facility is having an impact. NRC cannot arrive at any conclusions without data about the Bay populations.
- With respect to comments on the RIS (4-52), please see the attached NJPDES comment letter
- There is no evidence to suggest that anyone knows what the population abundances are for turtles, so one cannot assume that the ITS mitigates any and

all impacts. (4-53) The fact of the matter is that this Facility kills turtles, and those turtles are either threatened or endangered species.

- There is no discussion of the affects on state listed species. (4-53). The NRC should explain how it comes to the conclusion that with respect to threatened or endangered plants, there can be species found within one mile of the site, but yet the site is not suitable for those species. NRC or the applicant must explain how the 800 site differs from the habitat one mile from the site upon which threatened or endangered species are found. The absence of critical habitat does not mean that there is no adverse affect on a species.
- During the relicensing period, the total amount of spent fuel at the Facility will continue to increase. Why is the long-term impact of this stockpiling not discussed in the DEIS and considered?

8.1 Alternatives

- The Phase II rule has been challenged and is in any event inapplicable to the NJDEP permit decision. See the attached NJPDES comment letter for the ramifications on NRC's conclusions.
- It is incorrect to say that a modified one-through cooling water system with mitigation/restoration would lessen the impact. This can only be determined once the restoration plan is in place. Mindless restoration of tidal marshes will not do anything to mitigation the adverse impacts the Facility is having on certain populations of fish.
- NJDEP has not finalized the NJPDES permit. Restoration is not technology and it is not a viable alternative. In addition, the analysis of the impacts of the modified once-through cooling system is subject to all the same criticisms. NRC cannot conclude that restoring wetlands will have long term benefits to the Bay unless it knows what it is trying to accomplish and how that can be done.

8.2 No Action Alternative

- All of the adverse affects over the past 40 years will continue for the period of relicensing. The ecosystem may rebound if the Facility is not relicensed. After admitting that the construction of the intake and discharge canals destroyed the ecosystem, how can NRC conclude (8-35) that the cessation of those impacts will be small?
- NRC should consider EPA's responses to concerns about salt, icing and fogging at the Brayton Point facility in Massachusetts when determining the impacts associated with cooling towers (see attached NJPDES comment letter). Did NRC consult with EPA on the assessment of the alternatives? Or is NRC relying on information supplied by the applicant?

8.3 Alternative Energy Sources

- What is the basis for NRC's assumption that New Jersey will need to replace the Facility's power generation?
- Excluding all of New Jersey's potential for clean energy and energy efficiency programs, a PJM regional electricity grid assessment of transmission requirements to the New Jersey Board of Public Utilities (NJBPU) shows that Oyster Creek's retirement by the end of its current operating license in 2009 will require one transmission line upgrade. (PJM Report, attached). The PJM assessment also shows that if Oyster Creek retires in combination with the expected retirement of other aging coal plants, the solution is likely new transmission lines or transmission line upgrades. However, with proper planning, the electricity generated by Oyster Creek, 1.7% of the electricity consumed on the PJM Mid-Atlantic regional electricity grid, can easily be replaced through a combination of proper use of efficiency and conservation measures, as well as clean, safe, renewable power like wind and solar.
- The NJBPU, in conjunction with many state agencies, including the NJDEP, has begun developing a regional Energy Master Plan that examines the state's energy needs for the next 20 years. Throughout this process, New Jersey regulators will be making decisions about what is needed to meet New Jersey's energy demand. They will consider impacts to both the environment and the economy and will assume that plants will likely be retired, including Oyster Creek and several aging coal plants. In addition, several measures recently adopted by the legislature and the NJBPU will deliver substantial energy savings and increase renewable energy development.
- New Jersey just adopted one of the strongest clean energy standards in the country, ensuring that 20 percent of electricity consumed in the state comes from clean sources, primarily wind and solar, by 2020. In addition, Governor Corzine also has a goal of reducing energy consumption by 20 percent by 2020.

Conclusions

For the reasons articulated in this comment letter, NRC should not and cannot make any conclusions about either the environmental impact associated with the proposed relicensing of the Facility or the license renewal application. Therefore, NRC cannot finalize the EIS and must prepare a new draft that addresses the inadequacies raised in this letter and submit it for public comment. Until a proper EIS is prepared and reviewed, NRC should not make any decisions with respect to the relicensing of Oyster Creek. To do otherwise would constitute an impermissible, irrevocable commitment of resources in violation of NEPA

We thank you for the opportunity to submit these written comments.

Sincerely,

By: Julia L. Huff, Esq. / RE

Julia LeMense Huff, Esq.

Rutgers Environmental Law Clinic, Counsel to the Coalition

Attachment 1



Assessment of Transmission Requirements in New Jersey Including PSE&G Retirements and Potential Retirement in 2009 of Oyster Creek





The information provided herein was requested by the NJ Board of Public Utilities to assist in completing a due diligence review for a potential retirement of the Oyster Creek nuclear station. Analysis was performed by PJM as a result of that request, and is intended to be used solely for that purpose. This analysis does not represent any knowledge of or a determination by PJM with respect to the future status of the Oyster Creek nuclear station.



The analysis is limited to identifying potentially overloaded bulk power transmission lines (voltage levels of 230 kV and 500 kV) and high level estimates for typical transmission facility solutions. Local transmission impacts (voltage levels below 230 kV) are outside the scope of this study.

Estimates are generic, based on typical per unit costs, and do not attempt to quantify more highly variable cost elements, such as right of way acquisition, associated with specific solutions.



- PSE&G announced the retirement of Kearny 7&8; Hudson1; Sewaren 1,2,3 & 4 (total of 1136 MWs) by December 2004.
- Pursuant to PJM's generation retirements procedure, PJM conducted planning analysis to identify reliability impacts associated with those retirements.



Overloaded Transmission due to PSE&G Retirements



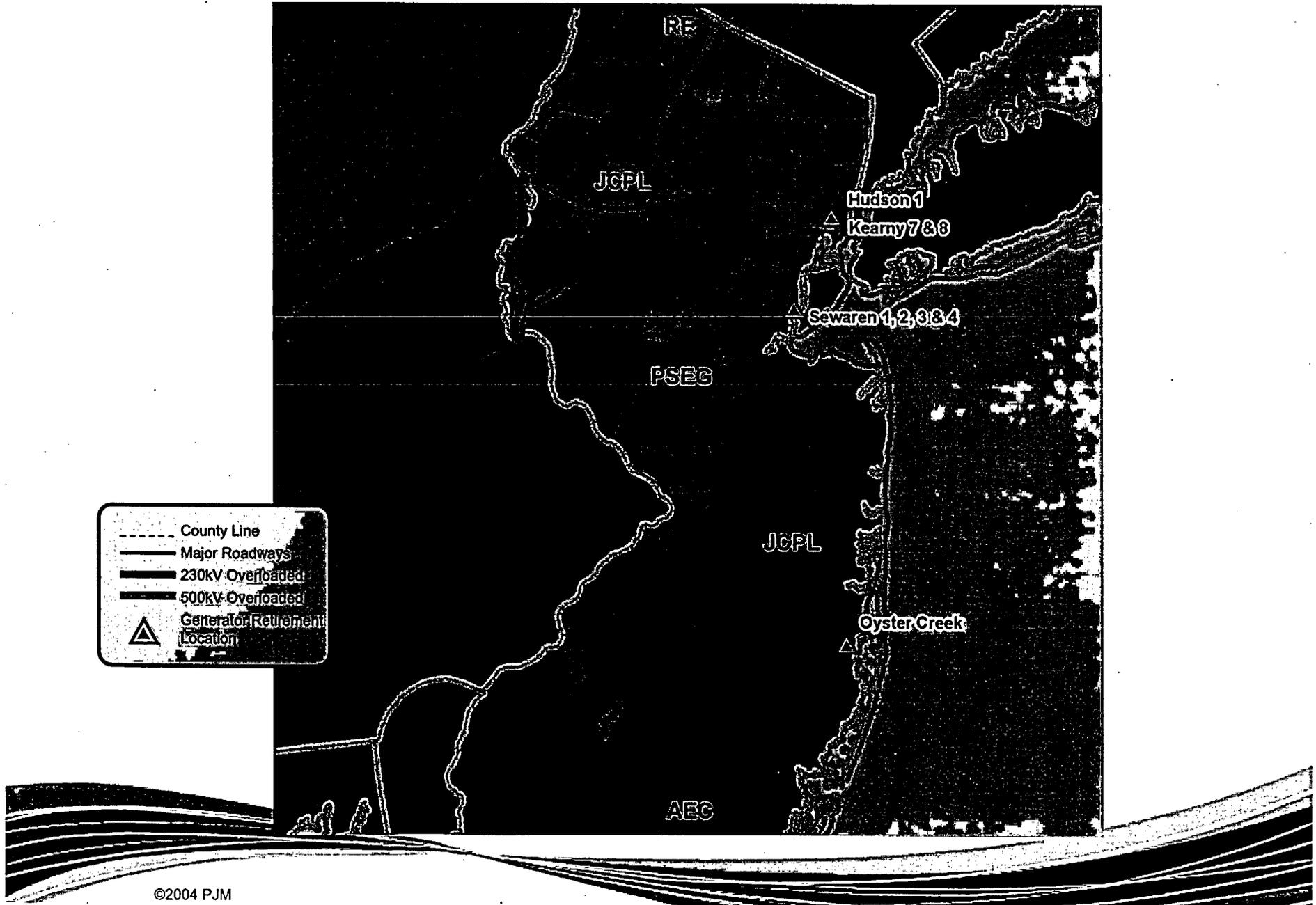


Overloaded Transmission due to PSE&G Retirements

- Present studies indicate that new transmission lines will probably be required in the proximity of the Warren, Morris and Somerset Counties to accommodate the PSE&G retirements. The cost for the new transmission is estimated to be around \$100 million. Costs associated with new rights-of-way, if required, could significantly increase this estimate.



Overloaded Transmission due to PSE&G Retirements – Adding the Oyster Creek Retirement Increases These Overloads

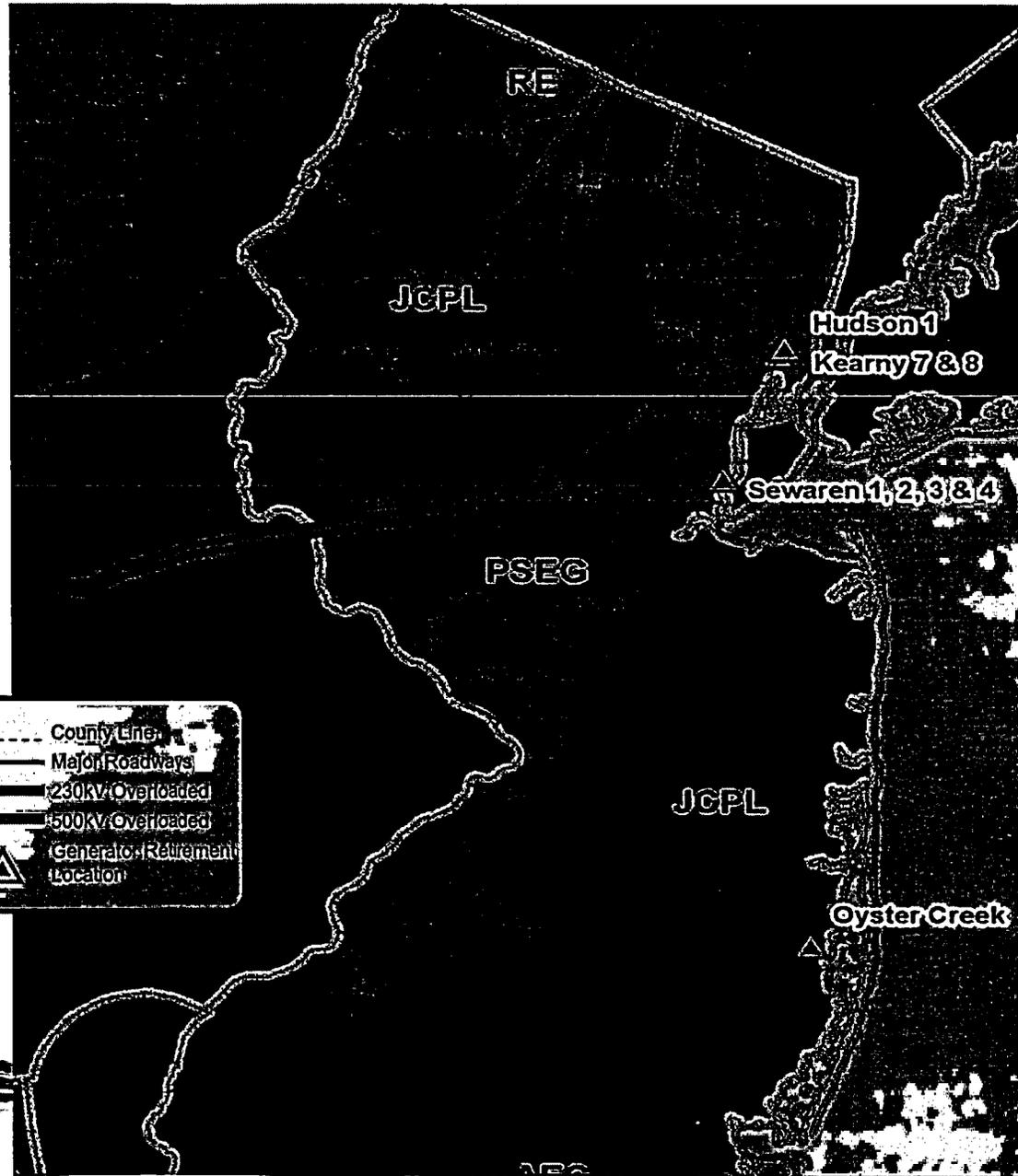




➤ The retirement of Oyster Creek will contribute to the loading on these facilities and may result in the need for additional transmission lines above the \$100 million estimate for the PSE&G retirements. Costs associated with new rights-of-way, if required, could significantly increase this estimate.



Additional Overloaded Transmission due to combination of PSE&G and Oyster Creek Retirements - Oyster Creek Retirement Significantly Increases Overloads



	County Line
	Major Roadways
	230KV Overloaded
	500KV Overloaded
	Generator Retirement Location

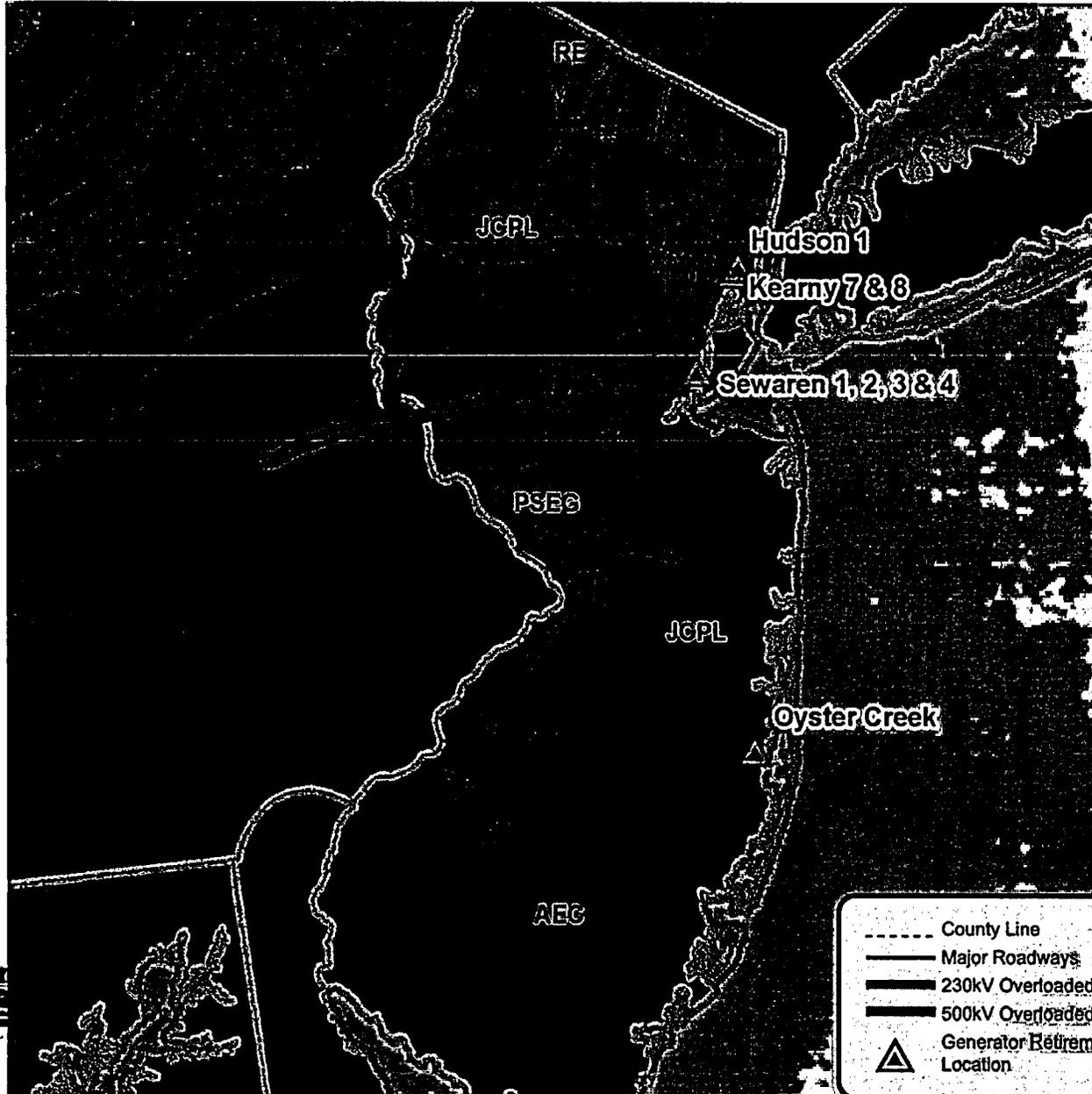


Additional Overloaded Transmission due to combination of PSE&G and Oyster Creek Retirements - Oyster Creek Retirement Significantly Increases Overloads

- Present studies indicate that new 500 kV or 230 kV transmission lines will likely be required to accommodate the Oyster Creek retirement in combination with the PSE&G retirements. This new transmission will likely require new rights-of-way, transmission siting approval, and environmental permits in addition to the actual time for the facilities to be constructed. New rights-of-way may be required in both Pennsylvania and New Jersey.
- Solutions for these additional overloads are likely to exceed \$100 million. Costs associated with new rights-of-way, if required, could significantly increase this estimate.



All New Jersey Overloaded Transmission due to combination of PSE&G and Oyster Creek Retirements



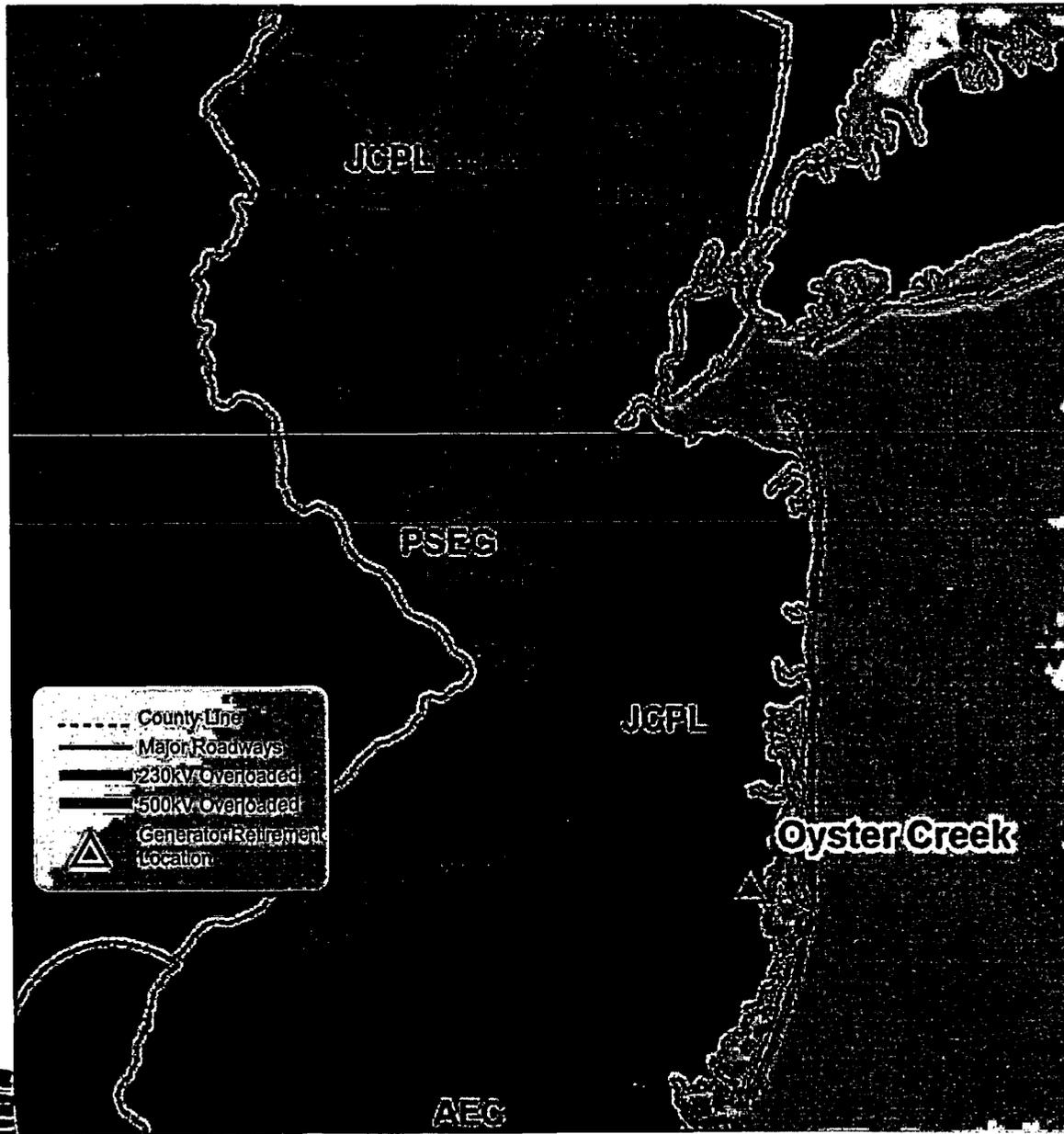
- County Line
- Major Roadways
- 230kV Overloaded
- 500kV Overloaded
- ▲ Generator Retirement Location



Solutions to resolve all overloads have not been identified but are expected to result in more than \$200 million of system upgrades including new rights-of-way and transmission lines. Costs associated with new rights-of-way, if required, could significantly increase this estimate.



Overloaded Transmission due to Oyster Creek Retirement – Excluding PSE&G Retirements





Present studies indicate that upgraded 230 kV transmission lines will likely be required to accommodate a retirement of the Oyster Creek generator. Acquisition of new rights-of-way are not anticipated for these 230 kV upgrades. Solutions to resolve all overloads have not been identified but are expected to exceed \$50 million. Costs associated with new rights-of-way, if required, could significantly increase this estimate.

Mail Envelope Properties (4501B7DC.47D : 10 : 38013)

Subject: Fwd: Attachment 1
Creation Date 09/08/2006 2:34:38 PM
From: "Raechelle edwards" <redwards@kinoy.rutgers.edu>

Created By: redwards@kinoy.rutgers.edu

Recipients

nrc.gov
TWGWPO01.HQGWDO01
OysterCreekEIS

Post Office

TWGWPO01.HQGWDO01

Route

nrc.gov

Files	Size	Date & Time
MESSAGE	53	09/08/2006 2:34:38 PM
Mail		
Mime.822	4067220	

Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Junk Mail Handling Evaluation Results

Message is eligible for Junk Mail handling
This message was not classified as Junk Mail

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User
Junk Mail handling disabled by Administrator
Junk List is not enabled
Junk Mail using personal address books is not enabled
Block List is not enabled

Attachment 2

**NEW JERSEY ENVIRONMENTAL FEDERATION, NEW JERSEY PUBLIC
INTEREST RESEARCH GROUP AND SIERRA CLUB-NEW JERSEY**

November 21, 2005

BY FAX, EMAIL & U.S. MAIL

Mr. Howard B. Tompkins, Chief
Bureau of Point Source Permitting -- Region 1
Division of Water Quality
New Jersey Department of Environmental Protection
P.O. Box 029
Trenton, NJ 08625-029

**Subject: Comments on Draft New Jersey Discharge Elimination System
Permit No. NJ0005550 -- Oyster Creek Nuclear Generating Station,
Lacey Township, Ocean County**

Dear Mr. Tompkins:

Please accept these written comments of New Jersey Environmental Federation, New Jersey Public Interest Research Group, and Sierra Club-New Jersey ("Coalition") on the draft New Jersey Pollutant Discharge Elimination System ("NJPDES") permit ("draft permit" for the Oyster Creek Nuclear Generating Station in Forked River, NJ ("Facility"). We appreciate the opportunity to provide input on this important permit.

We acknowledge the substantial effort that the New Jersey Department of Environmental Protection ("DEP") has made to review the many complex issues that bear on this permit. The Coalition commends DEP for providing a public hearing and for extending the public comment period until November 21, 2005 thereby affording the public an opportunity to carefully review the draft permit and supporting documents.

Introduction

The operation of Oyster Creek Nuclear Generating Station near the shores of Barnegat Bay is a matter of great public concern. The Bay is a public resource that is valued by the community for its wildlife, aesthetic values, and for fishing, boating and other recreational activities. Millions of dollars in public resources have been devoted to restoring the ecological health of the Bay. In 1987, Congress recognized the vital importance of estuaries and amended the Clean Water Act to create the National Estuary Program ("Program"). Clean Water Act § 320, 33 U.S.C. § 1330. In 1995, the Administrator of the Environmental Protection Agency accepted Barnegat Bay into the Program. Today, Barnegat Bay is one of 28 estuaries of "national significance."

As a result of its inclusion in the Program, stakeholders developed a Comprehensive Conservation and Management Plan to guide restoration of the Bay. Some progress has been made, but the health of the Bay is constantly under attack. It is the Coalition's judgment that under the draft permit, the Facility will be allowed to have an unacceptably and adversely high impact on the Bay, thereby undermining that progress. The plant uses antiquated technology: once-through, open cycle cooling that discharges millions of gallons of heated water into Oyster Creek and Forked River, tributaries to the Bay, every day. This same outdated system intakes 1.4 billion gallons of water each day, which results in the entrainment and impingement of trillions of aquatic biota, including 13 million fish and shellfish annually. In short, the draft permit would allow unacceptable degradation of a critical public resource for private gain. We note that facilities in other locations have adopted modern technologies that allow power generation with much lower environmental impact, such as closed cycle cooling ("CCC") systems, helper cooling towers, or the use of the heat-energy by-product for heating (i.e. co-generation). CCC systems: reduce the volume of water drawn by as much as 99%, eliminate fish kills caused by thermal shock from heated discharge, and reduce the dumping of over 365 tons of toxic chlorine into the Bay annually.

The permit must comply with the Clean Water Act ("CWA") and associated state laws. Unfortunately, the draft permit fails to do so. Specifically, there has been no showing in connection with the permit renewal that the proposed thermal discharge level will protect a balanced indigenous population of aquatic species in the Bay as required by 33 U.S.C. § 1326(a). Further, the draft permit allows the Facility the option to select restoration measures over the installation of closed-cycle cooling systems. Fact Sheet at 15. Although DEP recognizes in the draft permit that a closed-cycle cooling water intake structure ("CWIS") is the best technology available ("BTA") for minimizing adverse environmental effects as required by 33 U.S.C. § 1326(a), nothing in the draft permit requires the Facility to take steps to implement that technology. Restoration is not technology, and thus offering this measure as an option to the Facility to comply with the obligation under the CWA is an abdication of DEP's responsibilities as a delegated program under the CWA. To the extent DEP aims to achieve some good from the situation, it settles for "mitigation measures" that completely miss the mark. Finally, the draft permit fails to comply with the New Jersey Surface Water Quality Standards ("WQS").

With respect to the temperature criteria variance under §316(a), we are not able to reconcile DEP's statement that "the temperature limits DEP has selected in the draft permit strives to achieve a margin of safety to ensure a balanced indigenous population" with the science reviewed. Even though the permit includes an intricate system of date-specific temperature limits, and limits based on an assessed temperature differential (ΔT), this permit does not achieve an acceptable margin of safety. Further, based on our review of the administrative record compiled in connection with this action ("Administrative Record", we believe that little to no effort was made to review any current or recent studies—and none were submitted by the applicant. Accordingly, we feel that DEP is not justified in continuing the § 316(a) variance for this NJPDES permit and has failed to set

limits that are supported by the best available science for the species it aims to protect. Accordingly, we cannot support this permit.

With respect to the CWIS analysis under §316(b), the timing of proposed measures is of particular concern to the Coalition. DEP appears to have taken the position in drafting the permit that it was obligated to use aspects of the Phase II Cooling Water Intake Structure Regulations ("Phase II Rule") when assessing BTA for the Facility. As a result, the current permit does not require the Facility to take any definitive, concrete steps toward the installing of CCC during the five-year term of the permit. During the term of the draft permit, DEP is simply requiring the Facility to begin a series of studies and demonstrations required by the Phase II Rule. At the end of the five-year term, the result will be a number of studies—but no actual on the ground changes will take place at the Facility. Because DEP is not required to apply the Phase II Rule to the Facility, due to the fact that the permit application pre-dated the effective date of the federal regulations, DEP should exercise its Best Professional Judgment ("BPJ") under the CWA and require the Facility to commence feasibility studies to determine what type of CCC is feasible and make measured progress during the term of the permit to implementing that technology. EPA, *316(b) Phase II Implementation Question & Answer Document* (Aug. 2004) at 2A, available at <http://www.epa.gov/waterscience/316b/phase2-q-and-a.pdf>

Specifically, the Coalition recommends the following schedule, which has been informed by discussions with engineers from the Environmental Protection Agency: feasibility study completed by March 2006; installation study completed by June 2006; construction completed as expeditiously as possible, with significant progress by June 2007 and complete construction by June 2008 at the very latest.

I. The Thermal Discharge Variance Does Not Provide for the Protection and Propagation of a Balanced Indigenous Population of Aquatic Species in the Bay.

DEP has failed to ensure that the thermal discharge variance in the draft permit adequately protects a balanced indigenous population of aquatic species in the Bay and their habitat as required by section 316(a) of the CWA. Section 316(a) provides that if the owner or operator of a source can demonstrate that the thermal component of an effluent limitation for any discharges is "more stringent than necessary to assure the protection and propagation of a balanced, indigenous population [BIP] of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made," DEP may alter the proposed thermal discharge component of the effluent limitation to a less stringent level that will still assure "the protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife in and on that body of water."

A. Criteria for Assessing § 316(a) Variance Applications

NJPDES permits generally must include the more stringent of any effluent limitations derived from technology-based and/or water quality-based requirements. CWA § 316(a) provides, however, that the Department may put alternative, less stringent

thermal discharge limitations in an NPDES permit if certain criteria are met. We take a considerable amount of time in this comment letter to discuss this aspect of the NPDES permit for the Facility because the Administrative Record and Fact Sheet for this Permit are devoid of any meaningful discussion on this point.

Specifically, CWA § 316(a) provides, in pertinent part, as follows:

With respect to any point source otherwise subject to the provisions of section . . . [301 or section 306 of the CWA], whenever the owner or operator of any such source, after opportunity for public hearing, can demonstrate to the satisfaction of the Administrator (or, if appropriate, the State) that any effluent limitation proposed for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made, the Administrator (or, if appropriate, the State) may impose an effluent limitation under such sections for such plant, with respect to the thermal component of such discharge (*taking into account the interaction of such thermal component with other pollutants*), that will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water.

33 U.S.C. § 1326(a) (*emphasis added*). See also 40 C.F.R. § 125.70. A determination to approve alternative limitations under this statutory provision is commonly referred to as a CWA § 316(a) variance. See 40 C.F.R. § 125.71(a) and 125.72 (heading).

CWA § 316(a) authorizes alternative thermal discharge limits when it is demonstrated to the Department that the limits "will assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on that body of water" (sometimes referred to herein as the "BIP"). This criterion is reiterated in EPA regulations promulgated at 40 C.F.R. § 125.73(a).

The standard for granting a § 316(a) variance is stringent: Congress intended that it be granted only in limited circumstances. In the Senate Report on the 1977 CWA Amendments, Congress expressed its concern that section 316(a) was too often being employed in inappropriate circumstances, resulting in heat effectively becoming an unregulated pollutant.¹ The 1977 Senate Report indicates that Congress intended that section 316(a) serve as a "very limited waiver" provision to be employed only in instances where it could be established "beyond any question" that the BIP could be

¹ S. Rep. No. 95-570 (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4334.

protected by the modified federal effluent limitations.² Section 316(a), the Report explains, was not intended to become a "gaping loophole," allowing indiscriminate waivers of federal thermal effluent discharge controls.³

In making a § 316(a) determination, DEP is obligated to take *all* other environmental stressors into account, thus any attempts on the part of the Facility to analyze its impacts on the environment in a vacuum are fruitless. This requirement is set forth in the legislative history of section 316(a), which states:

It is not the intent of this provision to permit modification of effluent limits required pursuant to Section 301 or Section 306 where existing or past pollution has eliminated or altered what would otherwise be an indigenous fish, shellfish and wildlife population. The owner or operator must show, to the satisfaction of the Administrator, that a balanced indigenous population of fish, shellfish, and wildlife could exist even with the modified 301 or 306 effluent limit.⁴

Additionally, the owner or operator would have to show that elements of the aquatic ecosystems that are essential to support a "balanced, indigenous population of fish, shellfish and wildlife" would be protected.⁵

The CWA also does not define the term "balanced indigenous population." Some clarification of Congress' intent is provided, however, in the CWA's legislative history. The Report of the Conference Committee on S. 2770, the bill that was enacted as the Clean Water Act of 1972 and originated the current § 316(a), stated the following:

THERMAL DISCHARGES [Section 316]

* * *

It is not the intent of this provision to permit modification of effluent limits required pursuant to Section 301 or Section 306 where existing or past pollution has eliminated or altered what would otherwise be an indigenous fish, shellfish and wildlife population. The owner or operator must show, to the satisfaction of the Administrator, that a "balanced indigenous population of fish, shellfish and wildlife" could exist even with a modified 301 or 306 effluent limit. Additionally, such owner or operator would have to show that elements of the aquatic ecosystems which are essential to support a "balanced indigenous population of fish, shellfish and wildlife" would be

² *Id.*

³ *Id.*

⁴ *A Legislative History of the Water Pollution Control Act Amendments of 1972, Vol. 1, 93rd Cong., 1st Session at 175 [hereinafter 1972 Report of the Conference Committee].*

⁵ *Id.*

protected.

Congressional Research Service, *A Legislative History of the Water Pollution Control Act Amendments of 1972*, Vol. 1, 93d Cong., 1st Session, p. 175 (cited hereinafter as the 1972 Legislative History) (Senate Consideration of the Report of the Conference Committee (October 4, 1972)). See also December 27, 1977, Letter from EPA Region 1 Regional Administrator William R. Adams, Jr., to Edward A. Plumley, Vice President, NEPCO, p. 2 ("the indigenous community is . . . the community that would exist absent man-induced environmental changes.").

This language clearly indicates that Congress did not intend that a thermal discharger would be able to "take advantage" of prior pollution-induced harm that eliminated the BIP to justify alternative thermal discharge limitations under § 316(a) that would themselves be insufficient to protect the BIP. It also makes clear that Congress intended that elements of the aquatic ecosystem necessary to support the protection and propagation of the BIP would also be protected under § 316(a).⁶

Consistent with Congressional intent, EPA regulations define "balanced indigenous population" in the following manner:

The term balanced indigenous community is synonymous with the term balanced, indigenous population in the Act and means a biotic community typically characterized by diversity, the capacity to sustain itself through cyclic seasonal changes, presence of necessary food chain species and by a lack of domination by pollution tolerant species. Such a community may include historically non-native species introduced in connection with a program of wildlife management and species whose presence or abundance.

⁶ In the legislative history of the 1977 CWA Amendments, Senator Muskie also discussed the meaning of the phrase "balanced indigenous population of fish, shellfish and wildlife" as used in the "interim [national] water quality standard." He explained that:

As in 1972, it was intended that the interim water quality standard be that condition of aquatic life which existed in the absence of pollution. There is no question that man's activities have radically altered receiving water ecosystems in this country and that alteration is continuing at an accelerated pace in many areas. Restoration of aquatic ecosystems which existed prior to the introduction of pollution from man's activities is an important element of the restoration and maintenance of the biological, physical, and chemical integrity of receiving waters. It is an essential aspect of assuring that future generations will have an adequate supply of basic life support resources.

The concept of indigenous does not anticipate the removal of structures from waterways. It does not anticipate the existence of ecosystems which existed in the absence of those structures. But it does fully anticipate the analysis of aquatic populations in terms of man's activities prior to, and subsequent to, pollution.

results from substantial, irreversible environmental modifications. Normally, however, such a community will not include species whose presence or abundance is attributable to the introduction of pollutants that will be eliminated by compliance by all sources with section 301(b)(2) of the Act [i.e., technology standards]; and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to section 316(a).

40 C.F.R. § 125.71(c) (emphasis in original). It is clear under this definition that a satisfactory BIP under § 316(a) need not in all circumstances match some sort of estimated aboriginal assemblage of organisms. At the same time, however, the BIP must satisfy the listed indicia of an ecologically healthy community of organisms, including that it cannot be dominated by pollution tolerant species, or species whose presence or abundance is attributable to § 316(a) variance-based permit limitations, or include pollutant discharges that will be eliminated pursuant to technology-based effluent limitations under § 301(b)(2). See 44 Fed. Reg. 32894 (June 7, 1979) (Preamble to Revised 40 C.F.R. Part 125 Subpart H); see also 39 Fed. Reg. 36178 (Oct. 8, 1974) (preamble to earlier version of EPA regulation containing substantially similar definition).

EPA provided further clarification regarding the meaning of BIP under § 316(a) in the case of *In the Matter of: Public Service Company of Indiana, Inc., Wabash River Generating Station*, 1979 EPA App. LEXIS 4, 1 E.A.D. 590 (November 29, 1979). In *Wabash*, EPA made clear that in assessing the BIP, EPA must look not only at the community as a whole but also at the effects on individual species of fish that should be part of that community. 1970 EPA App. LEXIS at 21 ("it is clear that both individual [species] and community considerations are relevant"). EPA explained that "...in attempting to judge whether the effects of a particular thermal discharge are causing the system to become imbalanced, it is necessary to focus on the magnitude of the changes in the community as a whole and in individual species; i.e., whether the changes are 'appreciable.'" *Id.* at 22. Finally, EPA also made clear that it is not acceptable that a particular discharge will allow the propagation of some community of fish with a certain degree of diversity and abundance; the thermal discharge limits must be sufficient to protect the BIP that ought to be present in the particular receiving water consistent with the regulations. As EPA explained:

Section 316(a) must, like any other provision of the Act, be read in a manner which is consistent with the Act's general purposes. Consequently, § 316(a) cannot be read to mean that a balanced indigenous population is maintained where the species composition, for example, shifts from a riverine to a lake community or, as in this case, from thermally sensitive to thermally tolerant species. Such shifts are at war with the notion of "restoring" and "maintaining" the

biological integrity of the Nations' waters. Thus, even though it may be difficult or even impossible to define what the precise balanced indigenous population would be in the absence of heat, it is generally sufficient, as the regulations provide, that it "will not include species whose presence or abundance is attributable to the introduction of pollutants," such as heat, and that it should be characterized by "non-domination of pollution tolerant species."

Id. at 28-29 (citation omitted).

The statute and regulations are also clear that in applying CWA § 316(a), the permitting agency must take account of the cumulative effects of other stresses to the BIP. First, CWA § 316(a) states that the permitting authority may impose variance-based thermal discharge limitations, "(taking into account the interaction of such thermal component with other pollutants), that will assure the protection and propagation of a balanced, indigenous population" Second, EPA regulations promulgated at 40 C.F.R. § 125.73(a) (emphasis added) state that a discharger's request for a § 316(a) variance "must show that the alternative effluent limitations desired by the discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of the BIP. See also 40 C.F.R. § 125.73(c)(1)(i). In the preamble to 40 C.F.R. Part 125 Subpart H, EPA stated:

Several commenters argued that applicants should not be required to analyze cumulative effects of thermal discharges together with other sources of impact upon the affected species as required by proposed § 125.47 (now 125.72(a)). This issue was addressed in the Administrator's first *Seabrook* decision which concluded that analysis of cumulative effects is required.

44 Fed. Reg. 32894 (June 7, 1979).

In the *Seabrook* permit appeal decision referenced above, the EPA Administrator stated the following:

The RA [(i.e., the Regional Administrator)] ruled that a determination of the effect of the thermal discharge cannot be made without considering all other effects on the environment, including the effects of the intake (i.e., entrainment and entrapment); the applicant must persuade the RA that the incremental effects of the thermal discharge will not cause the aggregate of all relevant stresses (including entrainment and entrapment by the intake structure) to exceed the 316(a) threshold. I believe this is

the correct interpretation of Section 316(a). The effect of the discharge must be determined not by considering its impact on some hypothetical unstressed environment, but by considering its impact on the environment into which the discharge will be made; this environment will necessarily be impacted by the intake. When Congress has so clearly set the requirement that the discharge not interfere with a balanced indigenous population, it would be wrong for the Agency to put blinders on and ignore the effect of the intake in determining whether the discharge would comply with that requirement.

In re Public Service Company of New Hampshire, 10 ERC at 1261-62. Thus, discharge limits imposed under CWA § 316(a) must be sufficient to ensure the protection and propagation of the BIP, taking into account other environmental stresses on that population.

Another point worth mentioning here is that "mixing zones" may be used "as a mechanism for dealing with thermal discharges pursuant to section 316(a) of the Act." EPA Decision of the General Counsel, *In re Sierra Pacific Power Company*, EPA GCO 31 (October 13, 1975). Although a "mixing zone" is a permitting concept or tool generally used in applying State water quality standards, the legislative history of CWA § 316(a) indicates that Congress felt mixing zones could also be used in designing permit limitations based on a CWA § 316(a) variance from applicable technology standards. *Id.* Of course, to satisfy § 316(a), a mixing zone would need to be designed to ensure the protection and propagation of the BIP. See 39 Fed. Reg. 36178 (Oct. 8, 1974) (Preamble to EPA's earlier § 316(a)-related regulations).

In applying CWA § 316(a), *cost or economic issues are not a consideration*. The plain language of § 316(a) makes clear that variance decisions are to be based on a determination of the limits needed to ensure the protection and propagation of the BIP. No mention is made of cost considerations being brought to bear. The legislative history also indicates that Congress did not intend costs to be considered in applying § 316(a). 1972 Legislative History, p. 175. Similarly, EPA's regulations clearly do not provide for costs to be a consideration in making a CWA § 316(a) variance determination. See 40 C.F.R. § 125.73. EPA has also interpreted CWA § 316(a) in this manner in practice. See *In the Matter of: Public Service Company of Indiana, Inc., Wabash River Generating Station*, 1979 EPA App. LEXIS 4, [*41] - [*43], 1 E.A.D. 590 (Nov. 29, 1979). Thus, while costs are to be considered in developing technology-based standards for thermal discharges, which must be based on the Best Available Technology economically achievable (BAT) standard under CWA §§ 301(b)(2) and 304(b)(2), costs are not to be considered in determining whether to grant a variance from such limits under § 316(a).

B. "Burden of Proof," Level of Evidence Required, and Different Types of § 316(a) Demonstrations

The statute plainly places the "burden of proof" in justifying alternative thermal discharge limitations under a CWA § 316(a) variance on the permit applicant. In this case, based on the information made available to the public, the applicant supplied no information to justify continuing the thermal variance, and DEP apparently was resolved to rely on information first presented in the 1970s and 1980s, which itself relies on data generated in the 1960s.

The statute provides that the permitting authority may impose such alternative thermal discharge limits, " whenever the owner or operator of any such source . . . can demonstrate to the satisfaction of the Administrator (or, if appropriate, the State) that any effluent limitation proposed [under CWA §§ 301 or 306] for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the protection and propagation of" the BIP, 33 U.S.C. § 1326(a) (emphasis added). The legislative history underlying § 316(a) confirms the plain meaning of the statutory language. 1972 Legislative History, p. 175 (emphasis added).

EPA's regulations further confirm that the burden is on the permit applicant to persuade the permitting authority that the non-variance limits are more stringent than is needed and that an alternative set of limitations will be sufficient to protect the BIP. 40 C.F.R. § 125.73(a). In addition, in the *Seabrook* permit appeal decision discussed above, the EPA Administrator also clearly stated that the burden of proof under § 316(a) is squarely on the permit applicant. *In re Public Service Co. of New Hampshire*, 10 ERC at 1261, 1263.

Moreover, it is also clear that "the burden of proof in a 316(a) case is a stringent one." *Id.* at 1264. CWA § 316(a) states that the applicant must demonstrate to the permitting authority's satisfaction that the applicable non-variance-based permit limitations are more stringent than necessary to assure the protection and propagation of the BIP. In the legislative history of the Clean Water Act Amendments of 1977, Senator Muskie⁷ stated the following with respect to § 316(a):

[T]he Congress intended that there be a very limited waiver for those major sources of thermal effluents which could establish beyond any question the lack of relationship between federally established effluent limitations and that water quality which assures the protection of public water supplies and the protection and propagation of a balanced,

⁷ Senator Muskie's comments from the legislative history have been given great weight by the courts in interpreting the CWA because he was the "principal Senate sponsor of the Act" *Environmental Protection Agency v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 71 n. 10 (1980). *Accord, e.g., Natural Resources Defense Council v. Costle*, 568 F.2d 1369, 1374 (D.C. Cir. 1977); *Am. Iron and Steel Ass'n v. Environmental Protection Agency*, 526 F.2d 1027, 1041 (3d Cir. 1975); *Am. Meat Institute v. Environmental Protection Agency*, 526 F.2d 442, 451 (7th Cir. 1975).

indigenous population of fish, shellfish, and wildlife, and allows recreational activities, in and on the water.

L. History 1977, p. 642; see also p. 457.

The above material suggests that DEP, in exercising its delegated authority under the CWA, should have taken a rigorous and conservative approach to granting and reissuing variances in order to meet the CWA's standard of assuring the protection and propagation of the BIP. Such an approach is appropriate in light of the fact that the applicant for a § 316(a) variance is seeking to be excused from otherwise applicable limitations, and in light of the CWA's overarching goals of restoring and maintaining the "biological integrity of the Nation's waters, [and attaining] "water quality which provides for the protection and propagation of fish, shellfish and wildlife." 33 U.S.C. § 1251(a) and (a)(2). There is no evidence that this occurred.

NJPDES permits are limited to a term of no more than five years. 33 U.S.C. § 1342(b)(1)(B). Thus, NJPDES permits expire and require reissuance at least every five years. (Expired permits remain in effect until a new permit is issued as long as the permittee has filed a timely application for permit reissuance. 40 C.F.R. § 122.6(a).) Accordingly, EPA regulations provide that previous § 316(a) variance determinations must be revisited at the time of permit reissuance. See 40 C.F.R. § 125.72(c) and (NOTB); 39 Fed. Reg. 36176 (Oct. 8, 1974) (Preamble to EPA's earlier § 316(a)-related regulations) ("Continuing monitoring by existing sources will provide opportunity to review their impacts from time to time and to impose more stringent effluent limitations, if necessary, in subsequent permits.").

While there is no hard and fast rule with respect to the question of how much evidence is needed to support a § 316(a) variance, EPA has explained that, "[m]uch depends on the circumstances of the particular discharge and receiving waters." *In re Public Service Company of New Hampshire*, 10 ERC at 1264. At the same time, information requirements are likely to increase to the extent that there is greater reason for concern over the protection and propagation of the BIP. As EPA stated in the preamble to its § 316(a)-related regulations in 40 C.F.R. Part 125 Subpart H:

Section 125.72 accordingly gives the Director the flexibility to require substantially less information in the case of renewal requests. This does not mean, however, that the Director may not require a full demonstration for a renewal in cases where he has reason to believe that circumstances have changed, that the initial variance may have been improperly granted, or that some adjustment in the terms of the initial variance may be warranted.

44 Fed. Reg. 32894 (June 7, 1979). See also 39 C.F.R. 36177 (October 8, 1977). In this case, DEP has failed to ascertain whether circumstances have changed; however, publicly available information suggests it has. DEP's failure to review the thermal variance is an

abuse of discretion.

EPA has also stated that it "must make decisions on the basis of the best information reasonably attainable." *In re Public Service Company of New Hampshire*, 10 ERC at 1265 (quoting 1974 EPA Draft § 316(a) Guidance). At the same time, the Agency has explained that it "may not speculate as to matters for which evidence is lacking," *Id.* at 1264, and that if "deficiencies in information are so critical as to preclude reasonable assurance, then alternative effluent limitations should be denied." *Id.* at 1265 (quoting 1974 Draft EPA § 316(a) Guidance). See also *In the Matter of: Public Service Company of Indiana, Inc., Wabash River Generating Station*, 1979 EPA App. LEXIS 4, [*34] - [*40], 1 E.A.D. 590 (Nov. 29, 1979) (Administrator remanded permit to Regional Administrator where Region had decided to grant variance-based thermal discharge limitations despite lack of data regarding thermal effects under worst case, low flow conditions).

An existing discharger may base its demonstration on a showing that there has been no "appreciable harm" to the BIP from the thermal discharge "taking into account the interaction of such thermal component [of the discharge] with other pollutants and the additive effect of other thermal sources." 40 C.F.R. § 125.73(c)(1)(i). Alternatively, an existing discharger can attempt to show that "despite the occurrence of such previous harm, the desired alternative effluent limitations (or appropriate modifications thereof) will nevertheless assure the protection and propagation of . . . [the BIP]." 40 C.F.R. § 125.73(c)(1)(ii). In this case, the applicant did neither.

With respect to the appreciable harm test, EPA has explained that proposed thermal discharge limitations fail the § 316(a) variance test if those limitations would, taking into account other stresses upon the BIP, cause appreciable harm to the BIP in the future. *Wabash*, 1979 EPA App. LEXIS 4, [*16] - [*17], 1 E.A.D. 590 (November 29, 1979). In addition, thermal discharge limitations which caused appreciable harm to the BIP in the past are not to be renewed under a § 316(a) variance unless those limits are modified to prevent future harm or other circumstances are demonstrated to have changed so that appreciable harm will not occur in the future. *Id.*

C. Outline of § 316(a) Decision Criteria

Under § 316(a), the effects of the discharge of heat from the Facility to the BIP of marine organisms in Barnegat Bay are supposed to be analyzed. The § 316(a) Technical Guidance Manual suggests that an assessment of thermal impacts be done on a community-by-community (i.e., phytoplankton, zooplankton, habitat formers, finfish) basis. These decision criteria are detailed below. In the case of the present permit, they were not.

DEP did not revisit the § 316(a) variance request. None of these factors were considered. Further, it does not appear that Versar, when compiling its 1989 Technical Review and Evaluation of Thermal Effects Studies and Cooling Water Intake Structure Demonstration of Impact for the Oyster Creek Nuclear Generating Station (May 1989)

["1989 Report"], was able to actually utilize any of the data or information collected by the Facility prior to that date for purposes of making the No Prior Appreciable Harm finding, because "the evaluation presented by GPU is riddled with ... data inconsistencies which make a direct determination of the level of impact of the operation of OCNGS all but impossible." 1989 Report at V-2. Accordingly, Versar chose instead to "evaluate the losses due to the operation of OCNGS using three assessment models." *Id.*

Versar's three models were "designed to estimate the fractional reduction in RIS [representative important species] populations or population processes that [were] directly attributable to the Oyster Creek facility." However, Versar relied on the flawed data supplied by the Facility. In fact, one of the flaws pointed out by Versar in its initial evaluation of the data provided by the Facility as it relates to the designation of the RIS was that the Facility had not identified any representative important species in the "habitat former" or the "threatened and endangered species" categories. Versar selected a species to round out each of these categories. For the habitat former category, Versar selected eel grass. For threatened or endangered species category, it selected the Atlantic Ridley turtle. The endangered sea turtle was selected because of the possibility that it could be impinged on the trash racks used at the Facility. However, with respect to this category, Versar concluded in 1989 that "no impingement of sea turtles has been reported from the Oyster Creek NGS. Power plant interaction at the Oyster Creek NGS with threatened and endangered species is likely to be negligible." 1989 Report at III-7.

D. Changed Circumstances

What we have learned since the 1989 Report with respect to sea turtles should have been reason enough for DEP to revisit the § 316(a) variance. The sea turtle, the only threatened and endangered RIS category member, is never mentioned again throughout the 1989 Report. There is no data about sea turtles reported or analyzed. DEP's failure to revisit any aspect of the § 316(a) demonstration in the context of this permit review is the essence of arbitrariness.

In July 2000, the Facility completed a report entitled Assessment of the Impacts of the Oyster Creek Nuclear Generating Station On Kemps Ridley, Loggerhead and Atlantic Green Sea Turtles, July 2000 ("2000 Turtle Assessment"). As the name suggests, the 2000 Turtle Assessment discusses three turtle species: the Atlantic Green, Kemps Ridley, and Loggerhead. At the Facility during the period from 1977-1994 there were 8 strandings. From 1994-2000 there were an additional 6. The majority of these sightings of stranded turtles occurred between June and October. Notably the sighting information is limited to these specific months, because those are the times that Facility employees are required to attend the trash racks, but some evidence suggests that the turtles could remain in the area through November.

In addition to strandings, according to the 2000 Turtle Assessment, 14 turtles have been taken between 1992 and 2000. Many of the turtles were taken and sent to labs to have necropsies but none of the results from the early nineties have come back. The 2000 Turtle Assessment is itself out of date, but it provides a useful reference point in light of

the complete absence of sea turtle data in connection with past § 316(a) demonstrations. There are no updates as to incidental captures of turtles from the past 5 years. In addition, the majority of the research information regarding the populations of various endangered and threatened turtle species is based on reports by scientists from the mid 1980s. In fact, the 2000 Turtle Assessment makes assumptions as to turtle frequency based on outdated information. The 2000 Turtle Assessment claims that there were no captures at all prior between the years 1970 and 1992 but there is no indication that the Facility was keeping a record, or was required to do so.

The Facility's impact on sea turtles stems from the Facility's intake system that has two functions: 1) to circulate water through the Facility (the circulating water system ("CWS")) and 2) to direct water around the Facility to the discharge area as a means of cooling intensely hot water that is released after the Facility has been cooled by the CWS, called the dilution water system intake ("DWS"). The intake system uses trash rake bars to remove debris from the water and this is generally where the turtles are found. In addition there are vertical screens that move up and down in order to capture fish and discharge them. Nearby Barnegat Bay is maintained at a depth of 6.6 feet by the Army Corps of Engineers for navigation purposes. In fact the Army Corps dredged the inlet for better navigation in 1991 and the NRC claims that this is one of the main reasons for increased capture because the turtles now have better access to the Bay.

There are 6 separate independent intake bays, each with its own intake bar and screens and trash racks. Each of these trash racks is up to 24 feet high and approximately 11 feet wide. There is a mobile mechanical trash rake to remove debris. It is 6 feet wide and is controlled by a single operator from a manual pushbutton control panel that is mounted on the unit's frame assembly.

In addition to the 2000 Turtle Assessment, in 2005, the NRC was forced to reinstate consultation with National Marine Fisheries Service ("NMFS") due to the fact that the Facility exceeded its incidental take statement ("ITS") for endangered Kemp's Ridley turtles when it took 8 endangered Kemp's Ridley turtles in 2004. In connection with the consultation, NRC prepared a biological assessment. Nuclear Regulatory Commission, *Oyster Creek Nuclear Generating Station Sea Turtle Impact Assessment* (Mar. 2005). Because of the violation of the ITS, which could subject both the Facility and NRC to enforcement actions under the ESA, NRC requested that the number of lethal takes allowed each year be increased, and that NMFS not put any cap on the number of non-lethal takes. *NRC argues that this is necessary not because of any change in the operation of the Facility, but due to the apparent increase in the turtle population in the area of Barnegat Bay and the warming waters.* Moreover, according to the Marine Mammal Stranding Center in NJ there have been increased sightings and recent changes in the ranges of the Atlantic Green Sea Turtle that is not addressed by the 2000 Turtle Assessment.

Did DEP consider this information? If yes, why is it not in the Administrative Record? If not, why not? If NRC has asked to increase the number of permitted incidental takes of turtles due to factors *beyond the control* of the Facility, then how can

DEP conclude that there is no need to do anything other than continue the thermal limits set in the prior permit? The fact that the ecosystem around the Facility is changing contradicts DEP's laissez faire approach under the CWA, and in fact violates the requirements of § 316(a). If DEP has no idea what is happening in the ecosystem, how can it ensure that the thermal variance requested by the applicant will assure the protection and propagation of the BIP?

E. Cumulative Impact Assessment

According to CWA §316(a) and 40 C.F.R. §125.73 (a) and (c), to determine whether the protection and propagation of the balanced indigenous community is being achieved, EPA must consider, not only thermal impacts, but impacts from other stressors as well. Each species is subjected to a wide variety of stressors or sources of mortality. Therefore, the future operation of this Facility, in conjunction with the other sources of mortality, must ultimately still allow the existence of a balanced indigenous community. In the case of Oyster Creek and the receiving waterbody, the cause or causes of the dramatic decline of fish stocks has been the subject of substantial debate. The applicant points to a wide variety of stressors on fish populations. However, in the case of EPA has made it clear that "each population will increase or decline based on the cumulative mortality rate, comprised of both natural and anthropogenic factors." The goal of the permit is to allow the ecosystem and its populations the chance to recover in accordance with the stated goals and purposes of the Clean Water Act. Thus the cumulative mortality rate must result in a positive population trajectory. The greater the natural mortality rates, the smaller the anthropogenic mortality rates must be to allow for a recovery.

Although several fish stocks are of concern in the Barnegat Bay ecosystem; there is no current discussion in the Fact Sheet or in the Administrative Record of the status of those fish stocks. Again, DEP simply relies on outdated information that has no bearing on the status of the BIP. Entrainment, impingement and thermal effects resulting from plant operations are additional critical stressors on fish populations in the receiving waterbody. While there may be other stressors, such as predators, water quality, thermal discharges and entrainment and impingement, the existence of those stressors does not change the analysis that DEP is required to do. In this case DEP simply did not do the required analysis.

1. Types of Analyses

In order to receive a § 316(a) variance from water quality and technology standards, an applicant must demonstrate that its thermal discharge will not interfere with the protection and propagation of a balanced indigenous community within the receiving water. Applicants can do this in one of two fashions: they can submit a retrospective analysis or a prospective analysis. A retrospective analysis attempts to prove lack of harm from past operation. If the applicant can demonstrate a lack of harm from past operations, then one may be able to infer no future harm if operations and other stressors are continuing into the future at rates similar to or less than the past. A prospective

analysis attempts to predict impacts in the future based solely on future plant operating conditions and other factors.

Given the impracticability of undertaking this confirmatory test, for the purpose of issuing this § 316(a) variance, DEP should assume that the proposed limits are less stringent than the water quality-based thermal limits. Without any studies or other current data submitted by the Facility to support the variance, DEP should reject the variance request. Only in this way can DEP assure the protection and propagation of a balanced indigenous population of fish, shellfish and wildlife in and on Barnegat Bay.

Similarly, the Environmental Appeals Board ("EAB") has held that NPDES permits must ensure the protection of the BIP at a level that would otherwise be present but for past pollution.⁸ Finally EPA regulations also require that cumulative impacts of other environmental stressors be taken into account in establishing a 316(a) variance.⁹ This tenet reflects the reality that the cumulative effects of multiple environmental stressors adversely affect an organism's ability to cope with additional environmental stress.

As discussed below, the Administrative Record contains no scientific evidence upon which DEP can make a finding that the proposed variance is sufficiently stringent to protect a balanced indigenous population in the best of circumstances, let alone in the present case where fish and other aquatic life already face multiple stressors.

The specific concerns that the Coalition has with the development of this draft permit include (1) failure to appropriately utilize the best available science in setting appropriate thermal limits that will protect indigenous aquatic species, (2) failure to rigorously analyze the interaction of new thermal stresses with existing stresses, and (3) failure to develop a reliable system for monitoring ongoing impacts to the Bay.

2. General Comments and Questions on Biological Issues.

On what basis does DEP take the position that the proposed limits will promote a balanced indigenous population in the Bay?

Did DEP consider the enormous and well-documented ecological importance of water temperature in regulating behavior, physiology, and timing of reproduction in aquatic animals?

DEP should strive to allow water temperatures in the Bay to follow natural seasonal cycles and the Facility permit should be consistent with this goal. To allow the

⁸ *In the Matter of Pub. Serv. Co. of Indiana, Inc., Wabash River Generating Station*, 1E.A.D. 590, (1979 EPA App. LEXIS 4, *14 (1979)). The Environmental Appeals Board stated that, "if prior appreciable harm has occurred in the past, it may be reasonably assumed that it will continue in the future and that a balanced aquatic community will not be maintained." *Id.*

⁹ 40 C.F.R. § 125.73(a) (2004). The proposed section 316(a) variance must ensure the protection of the BIP when considering the cumulative impact of the thermal discharge in conjunction with all other significant impacts to the species. *Id.*

Facility to consistently offset water temperatures during the certain periods (i.e. ΔT limit) is to allow the company to alter the timing of behavior of the indigenous fauna so that it is out of synchrony with the ecology of other less impacted portions of the estuary. This is especially critical for migratory species and will prevent these species from succeeding in the Bay. To allow the Facility to drive water temperatures to limits that exceed what water quality standards, without any good, current biology review is unacceptable and illegal.

First, fish populations are not thriving and portions of the Bay, Oyster Creek and Forked River currently do not meet Aquatic Life Use Attainment standards, based on DEP's evaluation of aquatic life designated use support (biological status) in non-tidal rivers and streams using benthic macroinvertebrates sampled between 1997 and 2001. DEP, NEW JERSEY 2004 INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT (305(b) AND 303(d)) (June 2004), Sublist 1-5. Portions of these waterbodies are also impaired as to total coliform and fecal coliform. *Id.* Portions of Forked River are also impaired as to P, temperature, pH, dissolved oxygen, nitrate, dissolved solids, total suspended solids and unionized ammonia. *Id.* Second, there is a severe conflict of interest that undermines the credibility of any data provided by the Facility. Third, setting protective limits based only on estimates of lethal temperatures, or avoidance temperatures, is also not consistent with promoting the propagation of the indigenous species in question. These data tell us little about the temperatures under which the animals can thrive for prolonged periods, and which promote reproduction. Avoidance and lethal temperatures are essential for understanding how temperature changes in the Bay may influence behavior in the short term or for determining whether or not conditions in the MZ will rapidly cause mortality. However, it is dangerous to extrapolate from this kind of information to establish thermal conditions under which fish will thrive and successfully reproduce in the long-term. The Fact Sheet does not review any science upon which the permit should be based.

The RIS did not include a known, present endangered species—namely the Kemp's Ridley sea turtle. Versar indicated in its 1989 Report that the exclusion of a threatened or endangered species was a defect in the RIS. However, when Versar made its BIP determination under § 316(a), it did not do any analysis of the impact on the sea turtle. Why has the RIS not been reevaluated since the mid-1980s?

American eel (*Anguilla rostrata*) was one species of fish affected by the September 23, 2002 fish kill. Has DEP analyzed this stock in connection with the permit? What about the other fish species identified after fish kills? Some of those stocks are commercially valuable species. Has DEP contacted the ASMFC to inquire into the current status of the stocks when members of those species show up dead after fish kills? If yes, what is the outcome? If not, why not?

There is no evidence in the record that DEP did any analysis of the thermal impact, or revisited the existing variance pursuant to the terms of the CWA, the regulations and the guidance documents. DEP simply made a bold assertion that because little has changed operationally at the Facility, that the continued variance was appropriate. Fact

Sheet at 8. The 1994 permit variance, upon which DEP's decision is based, was itself based on a 1987 study. The 1987 study, in turn, was based in large measure on a 1974 (supplemented in 1978 and 1986) § 316(a) demonstration. The data considered in those studies, which themselves are now, at a minimum, nearly 20 years old, dates back to the 1960s. This failure is a violation of the Clean Water Act.

F. Conclusion regarding 316(a) Demonstration

AmerGen apparently requested that its previously approved alternative thermal discharge limitations be renewed. Fact Sheet at 7-8. The Facility received a variance under § 316(a) in its 1994 draft renewal permit, "based on the findings of the permittee's 1987 § 316(a) study." Fact Sheet at 7. The existing permit incorporated operating and monitoring conditions. *Id.* In connection with the renewal, the Department has simply determined that because the Facility's "operations have not changed appreciably since the time that the existing permit was issued and based on the fact that cooling water intake flow rates have remained relatively constant," the Facility has met the requirements of § 316(a).

We whole-heartedly disagree with DEP's conclusion. The Facility's request for a § 316(a) variance was inadequate and cannot possibly lead DEP to this conclusion. When a permittee requests a variance, it bears the burden of proof of justifying an alternative limit. It is well established that the standard for the burden of proof is high. In its original NJPDES permit application, and subsequent requests, the Facility requests a § 316(a) variance. AmerGen has made no showing, and the Department has made no finding that as of the date of this review, the Facility meets the requirements for a variance under section § 316(a). To allow this Facility to continue discharge water in excess of 100° F into the ecosystem, without making the necessary findings is a blatant violation of the Clean Water Act.

II. The Draft Permit Violates Section 316(b) of the CWA.

The Facility currently operates using a once-through cooling system. The Facility withdraws cooling system water from the Oyster Creek through the intake structures, circulates it through the plant's condensers, where the heat from the condensers is transferred to the water, and discharges it into the discharge canal. The Facility utilizes approximately 1.4 billion gallons per day to cool the plant and dilute its thermal discharge.

CWA § 316(b) governs requirements related to CWISs and requires "that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." The operation of CWISs can cause or contribute to a variety of adverse environmental effects, such as killing or injuring fish larvae and eggs by entraining them in the water withdrawn from a water body and sent through the Facility's cooling system, or by killing or injuring fish and other organisms by impinging them against the intake structure's screens.

In the absence of detailed regulations, EPA has for many years made CWA § 316(b) determinations on a case-by-case basis, both for new and for existing facilities with regulated CWISs. EPA has promulgated final § 316(b) regulations for new power plants, 66 Fed. Reg. 65255 (Dec. 18, 2001) (effective date of the regulations is January 17, 2002), but these regulations do not apply to *existing* plants such as the Facility. EPA also promulgated regulations to apply CWA § 316(b) to existing facilities, but because those regulations were finalized after the date the Facility applied for its renewal permit, those regulations do not apply. As a result, DEP should continue to apply § 316(b) on a case-by-case basis to existing facilities.

In making determinations under CWA § 316(b), EPA must consider engineering issues, environmental/ecological issues, economic issues related to the costs of implementing CWIS technology options, legal issues, and, ultimately, policy issues regarding the final choice of what level of expenditure is appropriate in seeking to minimize adverse environmental effects.

Available technologies are considered to be those that are feasible. Feasibility of a particular technology can in turn be demonstrated by an example of its use at another facility, or pilot or bench-scale testing. See 1994 EPA Background Paper No. 3, pp 1-1, 2-1, 2-5, 3-1; 1996 EPA Supplement to Background Paper No. 3, pp 1-2; EPA 1976 Development Document, pp. 175-55, 193. While cost is also a factor in determining feasibility, EPA recently determined that BTA actions should not be "financially impossible" for the facility to implement. EPA, Brayton Point Determinations Document, p. 7-7 (July 22, 2002).

The best technologies are the most effective means of minimizing adverse environmental impacts. When it comes to reducing entrainment and impingement, there is no question that CCC is the best technology.

When determining adverse environmental impacts, EPA guidance recommends that regulators look at both short term and long term impacts, and incorporate the protection and propagation of the BIP standard discussed above in the context of the § 316(a) analysis. May 1977 Draft 316(b) Guidance, at p. 15. When determining magnitude, both the total damage, as well as the percentage of a population of a species that is damaged needs to be considered. And in that context, the damage does not need to be total, and that § 316(b) may in fact require further minimization of adverse impacts even if the BIP would not be undermined.¹⁰ In fact, EA has interpreted the § 316(b) technology standard to require minimization of adverse environmental impacts whether or not they are significant," as long as the applicable economic tests are satisfied.

In making BTA determinations, EPA guidance states that regulators should assess the magnitude of the adverse impact. This assessment is done on a case-by-case basis

¹⁰ See *In the Matter of Public Service Company of New Hampshire, et al.* (Seabrook Station Units 1 and 2), 10 Env't Rep. Cas. (BNA) 1257, 1262 (EPA June 17, 1977); *Accord Decision of the General Counsel No. 63*, p. 371, 382 (July 29, 1977) (In re Central Hudson); *Decision of the General Counsel No. 41*, p. 197, 201-02 (June 1, 1976) (In re Brunswick Steam).

and must take into account the facts related to the ecosystem and natural resources in question. In the case of Oyster Creek, the Bay has been recognized by Congress as an important resource. The Bay also supports a large tourist economy. The Bay and Oyster Creek itself support fisheries that are of value to the community. And from an ecosystems perspective, if we already know that fish kills destroying only several thousand fish lead to penalties near \$1 million, and the number of organisms impinged and entrained each year is in the billions, and there is no price tag that can be affixed to endangered and threatened sea turtles,¹¹ then the magnitude of the harm caused each year by the Facility operating without CCC is considerable.

Based on the language and structure of the CWA, EPA has also determined that CWISs must reflect the BTA for minimizing adverse environmental impacts, whether or not those adverse impacts are considered to be significant. In other words, once impacts are determined to be beyond de minimis, then they must be minimized using the BTA.

And in the case of BPJ determinations, that economic test is the wholly disproportionate cost test. *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 206, 311 (1st Cir. 1979). However, even though EPA has read an economic component into the BTA determination under § 316(b) and the wholly disproportionate test, costs should not be a primary or paramount factor. In fact "the courts have been clear that in developing national standards under the BPT [best practicable treatment under 304(b)(1)(B), which is the origin of the cost test in 316(b)]... environmental controls might be required that would cause some "economic dislocation," and even plant closures, to achieve the stated environmental objective." EPA, Brayton Point Determination Document, at 7-19.

EPA has consistently held that the assessment of the significance of the adverse environmental impact must take the condition of the ecosystem into account.¹² Accordingly, as discussed above, losses from a stressed ecosystem like the Bay are considered more environmentally significant than greater losses from a healthy ecosystem. Another important factor is the biological value of the source water, including the presence of spawning ground, migratory pathways, and nursery and feeding areas.¹³ Again, as discussed above, the Bay has significant biological value. DEP must also consider cumulative impacts, that is, other stressors in addition to the CWIS in making BTA determinations.¹⁴

A. Closed Cycle Cooling Is the BTA.

In the draft document, DEP acknowledges that the use of a once-through cooling water intake structure is not the BTA. DEP identifies CCC as the BTA, and for that decision, we applaud the Department for this step.

¹¹ *Tenn. Valley Auth. v. Hill*, 437 U.S. 153 (1978)

¹² See 41 Fed Reg. 17388 (Apr. 26, 1976); May 1977 Draft section 316(b) at 11-15.

¹³ 1977 Draft Guidance 11-15.

¹⁴ *Public Service Company of New Hampshire*, 10 ERC at 1262.

With respect to any future analysis that may be conducted by the Department, the Coalition would like to remind DEP that the Facility has been in operation for approximately 45 years. This Facility is America's oldest commercial nuclear power plant. Its current operating license is due to expire in 2009, and the Facility presently is seeking to extend this license for another 20 years, until 2029. The application of BTA to the Facility has been looming for over 30 years. Because Oyster Creek has been in existence since 1969, and the regulations have been in existence since the 1972 Amendments to the CWA, there has been ample time to plan and put the necessary technologies in place to meet the stringent requirements of 316(b). The 1972 Amendments required new technology-based performance standards using different categories, and also allowed costs to be taken into consideration. DEP should not allow the Facility to put off any longer taking the necessary steps to finally come into compliance with § 316(b) of the CWA.

Since that time, there was an initial § 316(b) demonstration in 1974. Another study conducted by Versar in 1989, mentioned above, served to inform the Facility that the measures they currently had in place were inadequate to prevent or reduce impingement and entrainment losses. In 1995, the Facility was informed that CCC is the only CWIS technology currently available to the Facility to reduce entrainment losses. The fact that the Facility has not taken advantage of the last 10 years to attempt to install this equipment, conduct feasibility studies or investigate other technologies is all the more reason to impose a rigorous compliance schedule. The Facility apparently simply decided it was too expensive and opted for restoration as an alternative. This absence of any proactive measures on the part of the Facility, all the while taking advantage of the economic benefit of being able to avoid installing BTA at the Facility, is further evidence of the need for an aggressive permitting and compliance schedule in the current permit. Permit Fact Sheet 11-12.

The table below provides ample evidence that CCC is feasible and currently in use at many other facilities. All viable options relating to CCC should be explored and exhausted.

FACILITY NAME	YEAR BEGAN OPERATIONS	COOLING SYSTEM
Hope Creek Generating Station	1986	Towers (natural draft)
Enrico Fermi Atomic Power Plant	1985	Towers (natural draft) and pond
Palisades Nuclear Plant	1971	Towers (mechanical draft)
Davis-Besse Nuclear Power Station	1977	Towers (natural draft)
Perry Nuclear Power Station		Towers (natural draft)
Bellefonte Nuclear Plant		Towers (natural draft)
Joseph M. Farley Nuclear	1977	Towers (mechanical draft)

Plant		
Palo Verde Generating Station	1985	Towers (mechanical draft)
Rancho Seco Nuclear Station	1975	Towers (natural draft)
Edwin I. Hatch Nuclear Plant	1975	Towers (mechanical draft)
Vogtle Electric Generating Plant	1987	Towers (natural draft)
Byron Station		Towers (natural draft)
Duane Arnold Energy Center	1974	Towers (mechanical draft)
River Bend Station	1986	Towers (mechanical draft)
Monticello Nuclear Generating Plant	1971	Variable (mechanical draft)
Prairie Island Nuclear Generating Plant	1973	Variable (mechanical draft)
Grand Gulf Nuclear Station	1985	Towers (natural draft)
Callaway Plant	1984	Towers (natural draft)
Shearon Harris Nuclear Power Plant	1987	Towers (natural draft)
Trojan Nuclear Plant	1976	Towers (natural draft)
Beaver Valley	1976	Variable (natural draft)
Limerick Generating Station	1986	Towers (natural draft)
Susquehanna Steam Plant Station		Towers (natural draft)
Three Mile Island Nuclear Station	1974	Towers (natural draft)
Catawba Nuclear Station	1985	Towers (mechanical draft)
Sequoyah Nuclear Plant	1981	Variable (natural draft)
Watts Bar Nuclear Plant	1996	Towers (natural draft)
Washington Nuclear Project-2		Towers (mechanical draft)

Source: U.S. Nuclear Regulatory Commission, Generic Environmental Impact Statement for License Renewal of Nuclear Plants (NUREG-1437 Vol.1) Chapter 2, Tables 2.1 and 2.2.

B. Restoration Is Not BTA and Should Not Be Offered as an Option.

With respect to the restoration option that DEP has presented to the Facility, the Coalition strongly objects to the incorporation of this measure as an option or alternative for the Facility. The purpose of section § 316(b) is to "minimize adverse environmental impact from cooling water intake structures." EPA stated that restoration measures that have been previously used by existing facilities "compensate for the fish or aquatic organisms killed or enhance the aquatic habitat harmed or destroyed by the operation of

cooling water intake structures.” 66 Fed. Reg. 65256, 65280. This difference in wording demonstrates that restoration measures fail to minimize the adverse effects of cooling water intake structures. Restoration is simply not an alternative to technological improvements under § 316(b).

The term “minimize adverse environmental impact” is not defined in § 316(b). By implementing restoration measures, the Facility can only be said to be compensating for the damage done; it is not minimizing the effects of the harm done. *Riverkeeper v. United States Environmental Protection Agency*, 358 F.3d 174, 189 (2d Cir. 2004). Not only is it a violation of the CWA, it is a travesty to allow the Facility the option of simply continuing to destroy the marine environment through its titanic use of billions of gallons of water, causing impingement and entrainment losses, while claiming to restore other locations unrelated to the area it is destroying.

Although the Phase II Rule allows for compensation for negative impacts after the fact, this is clearly misconstruing the intention of Congress. Congress intended for the restorative measures used by facilities to minimize these effects, not to allow facilities to continue negatively impact the environment because they were allegedly compensating for destroying one environment by minimally supplementing another. EPA exceeded its authority by allowing existing facilities to use restorative measures in a manner that Congress did not intend. As such, DEP should not now rely on EPA’s unsound logic in the context of this permit.

To the extent DEP is attempting to find the “silver lining” and promote restoration of the watershed, restoration should be required as compensation for operating more than 30 years without having to implement BTA or remedy any environmental damage. In addition, restoration should first be undertaken in the same location of the damage created by the Facility. This is implied by the language used in the preamble of the Phase I Rule. 66 Fed. Reg. 65256, 65315. The relevant language states:

“The additional measures may include such things a reclamation of abandoned mine lands to eliminate or reduce acid mine drainage along a stretch of the waterbody, establishment of riparian buffers or other barriers to reduce runoff of solids and nutrients from agricultural or silvicultural lands, removal of barriers to fish migration, or creation of new habitats to serve as spawning or nursery areas.”

The use of the words “along the stretch of the waterbody” implies that the area to be restored is necessarily the affected area, and not an area in no way associated with the Facility’s activities. Even within EPA’s language, the restoration measures must take place at the same location where the impingement and entrainment occurred. It states: “enhance the aquatic habitat harmed or destroyed by the operation of cooling water intake structures.” The intended location for restorative measures was implied using specific language.

Restoration measures do not accomplish the kind of technology forcing measures required by § 316(b) and do not reflect Congress' intention. This is clear from the language of 33 U.S.C. §1326(a) and (b). In §1326(a), Congress explicitly stated its intention as it relates to effluent limitations and acceptable heat standards. However, in section 1326(b), no standards were stated to include restoration as a mitigation method. When Congress omits language it is done intentionally, showing that Congress did not intend to allow restoration to act as a mitigation element. *Riverkeeper v. United States Environmental Protection Agency* 358 F.3d 174, 190 (2004).

There is no statutory definition of "Best Technology Available." Congress does not omit information unintentionally from the statutes. The fact that Congress did not define "Best Technology Available" to include restoration shows that it was not Congress' intent that restoration be used as a mitigation method. EPA attempted to amend § 316(b) in 1982, but this was rejected by Congress. These changes would have allowed existing facilities to use measures, such as restoration, that would produce the same results that the best technology available would have produced. *Riverkeeper v. United States Environmental Protection Agency*, 358 F.3d 174, 190-91 (2d Cir. 2004). The fact that Congress rejected this attempt by the EPA shows that Congress does not distinguish, and has no intention of distinguishing between different types of facilities.

As detailed above, we believe BPJ should be the operative standard in making the § 316(b) determination in the present case, and take issue with the application of the Phase II Rule. However, if they were applicable in the present case, DEP should apply them more stringently. Further, we believe that an appropriate application of the BPJ standard would yield a significantly more stringent permit.

In light of the pending legal challenge to the rule, the status of the Phase II Rule is uncertain. It is of note that the Phase I regulations and the current Phase II Rule contain similar provisions, including provisions for restoration measures (overturned in the Phase I regulations) and a multiple alternative compliance approach for BTA. Both of these provisions were challenged in *Riverkeeper, Inc.* and have been challenged with respect to the Phase II Rule. Such a challenge may very well result in staying the regulations, thereby delaying the permit proceeding indefinitely. Similarly, the legality of the cost-based variance provision in the Phase II Rule is in question.

In *Riverkeeper*, the Second Circuit approved the provision in the Phase I regulations that allowed variances when the compliance costs are wholly out of proportion to the benefits. Allowing variances where the costs are wholly disproportionate is consistent with prior precedent on section 316(b). The Phase II cost-based variance provision, however, contains language allowing variances when the costs are significantly greater than the benefits. This places undue emphasis on cost as a factor in section 316(b) determination, and is inconsistent with the statute and case law. In sum, as explained in greater detail in the complaints filed in *Rhode Island v. EPA* and *Riverkeeper v. EPA*, the Phase II Rule are contrary to the statute and precedent interpreting section 316(b). In this instance, reliance on regulations that may be stayed due to current litigation is inappropriate.

Even if DEP decides to apply the Phase II Rule in the present case, the Facility has not yet submitted sufficient information to trigger analysis under the regulations. If DEP issues a conditional permit, based on materials the permittee will be expected to submit in accordance with the Phase II Rule, then DEP may alter the conditions of the permit based on information not made available to the public during the comment period. If DEP anticipates altering the intake limitations or other areas of the permit based on the Phase II Rule, the DEP should reopen the public comment period and the permit with respect to those provisions to ensure that the public has ample opportunity to review any new information.

III. The Draft Permit Violates the New Jersey Surface Water Quality Standards.

The proposed variance impermissibly allows violations of New Jersey's Surface Water Quality Standards. In enacting the CWA, one of Congress' principal goals was to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use (including restoration, preservation, and enhancement) of land and water resources."¹⁵ In accordance with this goal, the CWA and its regulations are clear that all provisions in a NPDES permit must comply with state WQS. Pursuant to section 401, DEP has an independent obligation to ensure such compliance prior to issuing the permit. Moreover, Congress' intent when drafting section 316(a) was to only allow variances of federal thermal effluent limitations. In the Senate Report on the 1977 CWA Amendments, Congress specifically rejected interpreting section 316(a) to allow variances of state water quality standards. "The Agency also concluded that the 1972 act was preemptive with respect to the application of State water quality standards and effluent limits for heat. This is a determination for which there is no substance in law and which is wholly contrary to the committee's long-held view that the States are free to establish any more strict standards or effluent limitations, as specifically set forth in section 510 of the act."

In sum, interpreting the plain language of section 316(a) to only authorize variances of federal thermal effluent limitations is consistent with legislative history, EPA's statutory obligations under the CWA and EPA's regulations.

New Jersey has designated the Bay SE1, which means that all permits must be consistent with its use as designated habitat shellfish, maintenance and propagation of natural biota, for primary and secondary contact recreation (which includes swimming, boating and fishing), and any other reasonable uses, NJAC 7:9B-1.12 (d). Further, by failing to protect existing uses, namely threatened and endangered species, the draft permit violates the anti-degradation standards of the WQS as well as the Clean Water Act. Finally, it is unclear how the draft permit will ensure that the thermal load will not exacerbate ongoing problems with nuisance species and other water quality problems.

¹⁵ 33 U.S.C. 1251(b); 40 C.F.R. § 122.4(d)

The § 316(a) thermal discharge variance in the draft permit is fundamentally inconsistent with WQS policy on mixing zones. The New Jersey mixing zone policy, NJAC 7:9B-1.5, requires effluent discharge areas designed to minimize impacts on aquatic life and assure there is no significant mortality, and provide safe and adequate passage zones for swimming and drifting organisms. In addition the water temperature limits and the discharge limits within the MZ are well above recommended temperatures. Under New Jersey's WQS, the maximum allowable MZ temperature is set spatially to avoid the short-term adverse effects to aquatic life within the MZ. Further, WQS also require MZ areas to have safe and adequate passage for swimming and drifting organisms causing no deleterious effects on their populations. As discussed above, the draft permit fails to meet these requirements as well. Finally, DEP did not comply with the policy urging site specific studies to show the adequacy of the zone of passage in waterways used by anadromous and catadromous fishes.

IV. Other Considerations and Questions.

Fish Kills and Other Operational Issues

The New Jersey Office of Administrative Law currently has pending before it a Joint Petition of Public Service Electric & Gas Company and Exelon Corporation for Approval of a Change in Control of Public Service Electric & Gas Company and Related Authorizations. State of New Jersey, Office of Administrative Law, OAL Docket No. PUC-1874-05, Agency Docket No. EMO 5020106. In connection with that matter, the Department intervened and recently submitted Prefiled Testimony of Richard H. Pinney, a research scientist in the DEP Bureau of Nuclear Engineering. In his testimony, Mr. Pinney elaborated on concerns regarding maintenance and safety margins and permit compliance issues he has observed about Exelon's operation of the Facility. He provided his testimony to highlight problems with what he described as the Exelon's management model. *Id.* at 1.

Mr. Pinney expressed concerned about the efficiency measures imposed by Exelon and believes they have resulted in less effective operations. He cites to these management decisions and states that they have led to a decrease in staff and maintenance costs, which has in turn affected the maintenance schedule and the plant outage time. *Id.* at 7. He claims that the reduction in staff in the environmental group at the Facility has caused a loss of institutional memory, which has impacted the Facility's compliance with its permits. *Id.* at 9. In particular, he cites to the September 2002 fish kill that killed over 6,000 fish, and the ensuing enforcement actions filed against the Facility for violating the permit and failing to notify the Department as to the violation. *Id.* at 11.

-- Did the Bureau of Point-Source-Permitting consult with BNE regarding the efficacy of monitoring requirements? Given the Facility's past violations, would it not be prudent to strengthen monitoring requirements?

The 2002 fish kill, however, was not the first. On January 21, 2000, when Facility operators shut down the reactor, it caused the water in the discharge canal to decrease from approximately 48° F to 32° F over a fifteen minute period. GPU Nuclear, *Fish Kill Monitoring Report for January 2000* (Feb. 2000). This cold shock killed at least 3,547 fish. Of course, this count is limited only to those that could be counted. Of those counted, 84% were striped bass and 9% were white perch. Other fish species killed included: black drum, bluefish, gizzard shad, striped mullet, American eel, mummichog, tautog, Atlantic herring, weakfish, spotted seatrout, winter flounder, red drum, smooth dogfish and cunner. Further, the 1989 Versar Report references numerous other fishkills further evidencing the adverse impact this Facility has on the environment.

Based on the information presented about the types of species killed, has DEP made any effort to review the RIS to determine if it should be modified to include other species?

In section 8.A.2.b. of the draft permit, it states that the maximum temperature action level of 97° F will be continued. Did DEP consider the history of fishkills when reviewing the action level? Did DEP consider changing the action level in light of the numerous requests over the last several years to perform maintenance, knowing in the past that such activities have led to fish kills? Did DEP consider requiring sensors at different locations?

Dilution Pump System

In connection with the comments filed with respect to the draft 1994 permit, the National Marine Fisheries Service asked to review a Plan of Study regarding the Dilution Pump Optimization Study as it relates to reducing impingement and entrainment losses. Letter of Stanley Gorski, NMFS, to Richard DeWan, DEP, dated August 29, 1994. NMFS stated that if the modification to the dilution pump schedule did not reduce the losses, then the Facility should be required to reduce those impacts by other means. Did NMFS review the study plan? If yes, what was the result? If not, why not? Did DEP undertake any additional review of the operation of the dilution pump system to determine if it is still effective?

In section 8.A.2.a. of the draft permit, it states that a workplan for the study was to be completed in and submitted in May 1995. Why are the results of that study not incorporated into the Fact Sheet? If they were, how?

In section 8.B.3.a of the draft permit, DEP suggests that restoration can be used as a means to offset entrainment. This is incorrect as a matter of law.

Updated Assessment of Fish Stocks

In that same comment letter, NMFS also remarked that the Versar Report contained misstatements about the status of fish stocks. In particular, the letter states that winter flounder were improperly identified as an underutilized fish stock. NMFS

rebutted that information with information from the Atlantic States Marine Fisheries Commission, which indicated that the fish stock is actually depleted and that efforts had been made to decrease the harvest. In light of this error, which will have undoubtedly infected the economic analysis conducted by Versar with respect to CCC, what efforts has DEP made to ensure that it has the most up to date information regarding the status of fish stocks? How will the change in fish stock status over the past 15 years impacted the economic analysis regarding CCC? Did DEP conduct a review of the status of other fish stocks? Did DEP require the Facility to submit that information as part of the application process?

In section 8.B.2.a, the draft permit suggests that the Atlantic Ridley turtle is part of the RIS and that it has been evaluated. This is incorrect. Has DEP reviewed the file to determine that, in fact, there is no data in the § 316(b) or (a) demonstration about the sea turtle? Is the RIS defensible? Can DEP make a permitting decision at this time without any rigorous analysis on this point?

Fish Diversion System

Why is the Facility not making use of the technology which diverts fish and other organisms removed from the traveling screens to a fish sampling pool and drained back into the Forked River?

Data Availability

All data collected under this permit should be made available in electronic form to the public through a web site. This is a public resource that is being used by a private company for profit. Scientists and other interested citizens of the State must be allowed timely access to any and all scientific data collected under this permit. This will allow the best use of the data from this public resource and will allow any interested member of the public to examine the condition of their resource. This may require changing part B of the draft permit.

Monitoring Requirements

In section 8.A.2.b of the draft permit, it states that exceedances of the temperature monitoring level are not a violation of the permit. Why does DEP continue to allow the Facility to adversely affect the environment with impunity? Isn't it possible that a stricter requirement would be technology forcing in this case?

In light of Mr. Pinney's testimony about his concerns with the environmental staffing at the Facility and the efficiency measures implemented by Exelon, can DEP still continue to maintain that the Facility's operations have not changed enough to warrant different monitoring?

CCC

In section 8.B.2.b of the draft permit, it suggests that Versar identified fogging, noise, salt drift and icing as "ecological" concerns. Has DEP looked at the Brayton Point Determination Document for guidance from EPA on these points? EPA squarely rejected these as ecological concerns and suggested that there are technological fixes for these. Is it possible that the 1989 Versar Report, upon which DEP is basing much of its decision, is simply too outdated to be of much value, in light of changes in technology?

We thank you for the opportunity to submit these written comments.

Sincerely,

Peggi Sturnfels, New Jersey Environmental Federation
Suzanne Leta, New Jersey Public Interest Research Group
Kelly McNicholas, Sierra Club - New Jersey

By: 

Julia L. Huff, Esq.

Kim Laurito, Student Intern

Erica Nelson, Student Intern

Rutgers Environmental Law Clinic, Counsel to the Coalition

Mail Envelope Properties (4501B87D.4C6 : 8 : 38086)

Subject: Fwd: Attachements
Creation Date 09/08/2006 2:37:01 PM
From: "Raechelle edwards" <redwards@kinoy.rutgers.edu>

Created By: redwards@kinoy.rutgers.edu

Recipients

nrc.gov
 TWGWPO01.HQGWDO01
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yahoo.com
 juliahuff CC (Julia Huff)

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Route
 nrc.gov
 yahoo.com

Files	Size	Date & Time
MESSAGE	53	09/08/2006 2:37:01 PM
Mail		
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Options

Expiration Date: None
Priority: Standard
ReplyRequested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Junk Mail Handling Evaluation Results

Message is eligible for Junk Mail handling
 This message was not classified as Junk Mail

Junk Mail settings when this message was delivered

Junk Mail handling disabled by User
 Junk Mail handling disabled by Administrator
 Junk List is not enabled
 Junk Mail using personal address books is not enabled
 Block List is not enabled

Attachment 3

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May 1, 2006

Commissioner Lisa Jackson
State of New Jersey
Department of Environmental Protection
P.O. Box 402
Trenton, NJ 08625

Subject: Oyster Creek Nuclear Generating Station -- NJPDES Permit;
Cooling Water Intake Structure Issues

Dear Commissioner Jackson:

In February 2006, my colleague, Richard Webster, met with members of your staff, including Susan Rosenwinkel and Narinder K. Ahuja, P.E., P.P., Director, Division of Water Quality, to discuss various issues regarding the Oyster Creek Nuclear Generating Station. During that meeting, the participants discussed the status of the Draft New Jersey Discharge Elimination System Permit No. NJ0005550 -- Oyster Creek Nuclear Generating Station, Lacey Township, Ocean County. Mr. Webster reported to me after the meeting that there appears to be some confusion among members of your staff, voiced primarily by Susan Rosenwinkel about the cooling water intake structure issue.

I am the attorney at the Rutgers Environmental Law Clinic who authored comments on the draft NJPDES permit on behalf of the following groups: New Jersey Environmental Federation, New Jersey Public Interest Research Group and Sierra Club -- New Jersey Chapter. It is my understanding that while the Department acknowledges that closed cycle cooling is the best technology available to dramatically reduce the impingement and entrainment effects associated with the intake of cooling water at Oyster Creek, your staff believes that it cannot require closed cycle cooling at Oyster Creek. This belief appears to stem from the erroneous conclusion that the federal Phase II Cooling Water Intake Structure Rule applies to the Oyster Creek facility and that an application of the rule to the facility would prohibit the Department from requiring closed cycle cooling. Because of my familiarity with the issue, I write to clarify this misconception.

The Phase II Cooling Water Intake Structure Rule

The United States Environmental Protection Agency promulgated a rule known as the Phase II Cooling Water Intake Structure Rule ("Phase II Rule"), which took effect on July 9, 2004. 69 Fed. Reg. 41576 (July 9, 2004). The purpose of the Phase II Rule is to

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+ Admitted in New Jersey Pursuant to 1:21-3(c)
+ Also admitted in New York

implement Section 316(b) of the Clean Water Act, which requires that the "location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts. 33 U.S.C. § 1326(b). EPA, 316(b) Phase II Implementation Question & Answer Document (Aug. 19, 2004) at 2A, available at <http://www.epa.gov/waterscience/316b/phase2-q-and-a.pdf>. The Phase II Rule generally applies to existing utilities that employ a cooling water intake structure, and whose intake flow levels exceed 50 million gallons per day. 40 C.F.R. § 125.91. The Phase II Rule also applies to other non-utility power producers, but for purposes of this letter, it is important only to note that a facility such as Oyster Creek could *potentially* be covered by the Phase II Rule. The applicability of the Phase II Rule to Oyster Creek is discussed in more detail in this letter.

The Cost Benefit Analysis

Cost is a factor in determining whether existing technology can be considered by the regulator to be the best technology available ("BTA") for minimizing the harmful environmental impacts associated with cooling water intakes. There are two different tests that can be used to determine whether the costs of retrofitting an existing facility, like Oyster Creek, are such that a facility should not be required to upgrade the facility by installing different technology, for example a closed cycle cooling system. The test employed by a regulator depends on whether the Phase II Rule applies. Under the Phase II Rule, the standard is that retrofitting "should not be required if its costs would be 'significantly greater' than the benefits to be realized." Matter of Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC, 2006 WL 295113, *23 (2006). For facilities not governed by the Phase II Rule, and for all facilities prior to the promulgation of the rule, the standard is "whether the costs of [retrofitting] are wholly disproportionate to the environmental benefits to be gained, compared with other available alternative technologies." Id. at 29.

Significantly Greater Test

The Phase II Rule requires utilities to conduct biological studies and characterize the impacts of cooling water withdrawals on surface water sources. 40 C.F.R. § 125.95. Depending on the outcome of the studies, existing cooling water intake structures may have to be technologically upgraded to minimize the impingement and entrainment effects of the structure. 40 C.F.R. § 125.98. The Phase II Rule includes a cost test that may allow a facility to meet a diminished performance standard (e.g. reducing impingement and entrainment to a lesser degree, or not at all) if the costs of the new technology are considered to be too great, or if the costs are not justified by the environmental benefits. 40 C.F.R. § 125.94(a)(5). If no additional technologies are cost-justified, existing technology can be considered BTA and therefore satisfy the requirements of Section 316(b) of the Clean Water Act. Id.

Wholly Disproportionate Test

In cases where the Phase II Rule does not apply, the test to be applied when determining whether a facility must technologically upgrade its facility to minimize adverse environmental impacts under Section 316(b) is the wholly disproportionate test. A review of In re Dominion Energy Brayton Point, L.L.C. (Brayton Point Station, NPDES 03-12), slip op. at 5-7 (EAB Feb. 1, 2006) is helpful, because it illustrates how the Environmental Appeals Board (EAB) has applied the "wholly disproportionate" standard. In that case, the EAB was faced with a dispute over how to determine "whether or not the cost of the BTA requirements for the Brayton Point facility would be 'wholly disproportionate to the environmental benefit to be gained.'" Id. at 155.

In Brayton Point, the EAB stated that the benefits analysis under the wholly disproportionate standard includes "an examination of several measures of benefits, including *non-monetized quantitative and qualitative considerations* (which included a consideration of both the biological benefits and the public policy impacts) as well as monetized estimates." Id. at 257 (emphasis added). The EAB noted that Section 316(b) of the Clean Water Act does not require the regulator to perform "a precise or detailed cost-benefit analysis." Id. at 227. Although the wholly disproportionate standard allows the regulator to consider monetary costs, a formal cost-benefit assessment is not required under the Act. Id., citing, Seabrook I, 1 E.A.D. 332, 340 (Adm'r 1977).

Importantly, the EAB held that because *Section 316(b) does not mention cost considerations*, costs should not be of primary importance under the 316(b) assessment. Id. at 230. In addition, the EAB suggested that the EPA (the permit issuer in the case of Brayton Point) is not even required to estimate any monetize benefits. Id. at 258. The EAB cited to numerous federal court decisions which held "that monetizing environmental benefits is difficult and that it would therefore be appropriate to consider nonmonetized benefits." Id. at 259. The EAB also rejected the facility's cost-benefit analysis under the wholly disproportionate standard because it was based solely on monetary costs and did not consider qualitative benefits. Id. at 271.

Application of the Phase II Rule to Oyster Creek

As noted above, the Phase II Rule became effective on July 9, 2004. EPA has set forth when the Phase II Rule applies to large, existing power generation facilities, like Oyster Creek. EPA, 316(b) Phase II Implementation Question & Answer Document (Aug. 19, 2004) at 2A, available at <http://www.epa.gov/waterscience/316b/phase2-q-and-a.pdf>. An analysis of the applicability of the Phase II Rule reveals that the Phase II Rule does not apply to Oyster Creek.

EPA has articulated two timing scenarios to determine if the Phase II Rule should be applied to a facility when that facility's permit expired prior to the effective date of the Phase II Rule, as is the case with Oyster Creek:

First, if (i) the facility's draft permit is proposed after the Phase II Rule takes effect and (ii) at the time of permit issuance, the facility has not submitted additional information required under the Phase II Rule to determine limitations under that rule, then the Section 316(b) limitations and conditions (e.g. requiring closed cycle cooling) set forth by DEP in the proposed draft and the final permit should be based on the agency's best professional judgment. Id. Further, because the Phase II Rule does not apply, the appropriate test for determining BTA in this circumstance is the wholly disproportionate test. Id. at 3. However, the Phase II Rule does require DEP to include in the final permit a schedule requiring the facility to submit the additional information required under the Phase II to determine future limitations "as expeditiously as practicable but not later than January 7, 2008." Id. This provision ensures that when the facility files its next permit renewal application, DEP will have the information it needs to assess the application under the Phase II Rule. As such, it is forward looking and does not in any way apply to the current permitting action.

Second, if (i) the facility's draft permit is proposed after the Phase II Rule takes effect, and (ii) prior to publication of the draft permit, the facility submits the additional information required to determine limitations under the Phase II Rule, then the section 316(b) limitations would be based on the requirements set forth in 40 C.F.R. § 125.95 and would take into account the additional information submitted. Id.

Oyster Creek's existing permit became effective on December 1, 1994 and expired on December 1, 1999. The Oyster Creek facility applied for a NJPDES permit on June 3, 1999—five years prior to the effective date of the Phase II Rule. DEP issued the draft NJPDES permit on July 19, 2005—after the effective date of the Phase II Rule. At the time of publication of the draft permit, the facility had not submitted the additional information required to determine limitations under the Phase II Rule. Therefore, the first of the two timing scenarios described above applies. As such, the Section 316(b) limitations in the proposed draft and the final permit should be based on DEP's best professional judgment. Id. at 3. Similarly, in using its best professional judgment, the DEP can determine that closed cycle cooling is the BTA for the facility. Any consideration of the cost of the BTA, however, must be done using the wholly disproportionate test.

DEP has recognized that closed cycle cooling is the best technology available for Oyster Creek to minimize its adverse environmental impacts. However, I understand that some in DEP are hesitant to require closed cycle cooling at Oyster Creek under the theory that an analysis of the costs under the Phase II Rule would render this technology cost prohibitive. Those expressing this concern are misguided in their application of the Phase II Rule to the Oyster Creek facility. In this case, DEP should use its best professional judgment to determine the best technology available to minimize environmental impacts associated with the cooling water intake structures at Oyster Creek. In exercising its judgment and analyzing the costs associated with that decision, DEP should not perform (or allow the operator to submit) a mechanistic, traditional cost-

May 1, 2006
Commissioner Jackson
Page 5 of 5

benefit analysis, but should employ the wholly disproportionate test and give due weight to non-monetizable and qualitative factors.

DEP recognizes in the draft permit that a closed-cycle cooling water intake structure is the best technology available for minimizing adverse environmental effects as required by 33 U.S.C. § 1326(a), but nothing in the draft permit requires the facility to take steps to implement that technology. Instead, DEP offers an alternative, purportedly under the Phase II Rules, that would allow the facility to choose a non-technological approach—and one that is clearly inferior to installation of BTA. Clearly, much will be revealed in connection with the ongoing NRC relicensing proceeding. While we recognize that DEP will take into consideration the lifespan of the facility in evaluating the costs associated with BTA at the facility, the uncertainty surrounding that proceeding should not allow the facility to put off for another 5 years (the term of the NJPDES permit) the installation of closed cycle cooling. Rather, we urge DEP to consider other timing options that would require the expeditious installation of closed cycle cooling should NRC relicense the facility.

Thank you for your careful attention to this technical, yet very important issue. Please do not hesitate to contact me if you have any questions.

Sincerely,



Julia LeMense Holt
Visiting Assistant Clinical Professor of Law
and Staff Attorney

cc: Suzanne Leta – NJPIRG
Kelly McNicholas – Sierra Club – NJ
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