CONSERVATION LAW FOUNDATION

January 29, 2009

Sharon DeMeo, Environmental Engineer
U.S. Environmental Protection Agency
Office of Ecosystem Protection, Industrial Permits Branch
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re: **<u>NPDES Permit for Mirant Canal LLC/Re-notice</u>**
Permit No. MA0004928

Dear Ms. DeMeo:

The Conservation Law Foundation (CLF) appreciates this opportunity to submit comments with respect to certain provisions of the Draft National Pollutant Discharge Elimination System (NPDES) Permit No. MA0004928 for Mirant Canal Station that have been re-noticed for public comment. We also appreciate EPA's commitment to finalize a NPDES permit for Canal Station now, pursuant to clear statutory authority, rather than wait for an indefinite period of time until a new Clean Water Act Section 316(b) Phase II Rule is promulgated; it is important to move forward immediately given that the facility's outmoded cooling water system is causing significant yet avoidable environmental harm as it operates under a permit issued nearly two decades ago. We applaud EPA for appropriately and decisively determining that closed-cycle cooling technology sets the standard here, ensuring that the facility's considerable impacts on fish eggs, larvae, juvenile and adult fish will be reduced significantly.

The following comments are not intended to provide an exhaustive analysis of the record or every issue raised in connection with the permit provisions that are the subject of re-notice. Rather, CLF wishes to weigh in regarding our support for EPA's requirement that Canal Station retrofit with closed-cycle cooling (or other technology meeting the same performance standards) and to address some of the erroneous assertions made by Mirant in challenging this requirement.

<u>Background</u>

CLF has a long history of advocacy geared toward protecting the region's marine resources and ensuring integrity in the enforcement of the Clean Water Act.

Founded in 1966, the Conservation Law Foundation is a nonprofit, member-supported public interest advocacy organization. CLF is dedicated to solving environmental problems that

threaten the people, communities, and natural resources in New England, including Massachusetts and Rhode Island.

To further these goals, CLF undertakes litigation and other legal advocacy on behalf of its members' interests, and promotes public awareness, education, and citizen involvement in conserving natural resources, protecting public health, and promoting vital communities in the region. CLF promotes clean, renewable, and efficient energy production in New England and has an unparalleled record of expertise and advocacy to protect the region's air quality, water quality, and marine resources. For example, CLF has brought successful lawsuits to prevent drilling for oil and gas on Georges Bank, the lawsuit that led to the Boston Harbor clean-up project, and multiple lawsuits to reduce over-fishing in the North Atlantic. In fact, for over 20 years CLF has been recognized as one of New England's strongest advocates for protection of the region's irreplaceable marine environments and the communities that depend on them.

Similarly, CLF has been a leader in addressing the environmental impacts of New England's electric energy system. Among other things, this has included a long-standing focus on reducing the severe environmental impacts associated with generation facilities including Mirant Canal Station ("Canal Station"). CLF also has a substantial organizational interest in restoration and protection of New England's precious waters. This interest is reflected in CLF's staunch advocacy of appropriate implementation of the Clean Water Act throughout New England. CLF has addressed numerous water pollution problems through active involvement in every aspect of Clean Water Act implementation.

In addition, CLF has thousands of members throughout New England. CLF members live in proximity to Cape Cod Bay and Buzzards Bay, and use these waters for commercial and recreational fishing, swimming, boating and other recreational activities. Water quality and the protection of fish stocks and other marine resources are vitally important to CLF members' use and enjoyment of these waters. It is in this context that we offer the following comments.

Mirant Canal Station and impacts on fish resources:

Canal Station is an 1120-megawatt (MW) fossil fuel-fired electric generating facility owned by Mirant Canal LLC and located in Sandwich, Massachusetts, on the banks of the Cape Cod Canal. It has two 560 MW oil/gas fired steam turbine units: Unit 1 (running on No. 6 fuel oil) began commercial operation in 1968 and Unit 2 (with dual fuel capability for No. 6 fuel oil or natural gas) began operating in 1976. The facility also has two smaller auxiliary boilers. Canal Station used to be considered a baseload power generation facility, but more recently has operated at significantly reduced capacity and in a manner more akin to a so-called "peaker," operating principally at times of peak electrical demand.

Canal Station withdraws cooling water from the Cape Cod Canal at a rate of approximately 518 million gallons per day and discharges various pollutants, including thermal pollution, into the Canal in the vicinity of identified Essential Fish Habitat (EFH). The facility's steam turbine condenser waste heat is released into the Canal via a once-through cooling water system.

Very large numbers of marine organisms are lost to entrainment and impingement by Canal Station's existing cooling water intake system. Water taken from the Cape Cod Canal by the facility contains millions of organisms including fish eggs and larvae. These organisms are pulled through (or "entrained") in the facility and killed by severe physical and chemical impacts and extreme water temperatures. Cooling water withdrawals also create water velocity at the intake pipes which traps (or "impinges") many juvenile and mature fish against the intake screens, causing injury or death. Based on available data, the facility is estimated by EPA to entrain between 2.6 billion and 3.6 billion fish eggs and between 187 million and 318 million larvae each year – including eggs and larvae of EFH species – and to impinge over 71,000 juvenile and adult fish annually. In addition, the facility's existing fish return system is configured such that at low tide levels, fish are dropped vertically through the air into receiving water located in between existing intakes – creating a significant risk of re-impingement.

Given serious declines in fish stocks, fish mortality caused by the plant presents even greater concern today than when the plant first began operation several decades ago.

History of the current draft NPDES permit for Canal Station:

The last time a new National Pollutant Discharge Elimination System (NPDES) permit was issued and became effective for Canal Station was in 1989. Thus, the facility is operating pursuant to a permit governing water intake and discharge under terms and conditions that are nearly two decades old.

The "new" NDPES permit currently under consideration for Canal Station has been in the works for years. The conditions in the Draft Permit were developed under "transition period" provisions of the Clean Water Act (CWA) Section 316(b) "Phase II Rule" (then in effect) pursuant to 40 CFR Part 125, Subpart J, for existing power plants with cooling water withdrawals of fifty million gallons per day or greater. The permit conditions then, as now, were required to be determined on a Best Professional Judgment (BPJ) basis – although the context for EPA's exercise of BPJ has shifted because the Phase II Rule in place when the Permit was originally drafted has since been suspended.

Importantly, in developing the Draft Permit, EPA found that Canal Station's Cooling Water Intake Structures (CWISs) were causing substantial adverse environmental impacts from entrainment and impingement, resulting in the killing of large numbers of fish eggs, larvae, juvenile and adult fish of a variety of species – including many, such as winter flounder, whose populations are severely depressed in adjacent Cape Cod and Buzzards Bays and beyond. Although Canal Station is located on its namesake Cape Cod Canal, a man-made waterway engineered for navigation between Cape Cod Bay and Buzzards Bay, the environment affected by the plant's cooling water intake and discharge is characterized by marine natural resources that are abundant (albeit depleted from previous levels).

In connection with the new Draft Permit for Canal Station, EPA therefore evaluated numerous technologies to determine the Best Technology Available (BTA) for minimizing adverse environmental impacts from Canal Station's cooling water intake structures (CWISs), including impingement and entrainment mortality impacts. In many instances, EPA agreed with the

assessments of Mirant's own consultant (Alden Research Laboratory ("Alden")) regarding the inadequacies of various alternatives. For example, both EPA and Alden rejected an alternative that would entail reducing water withdrawal volumes by up to 60 percent – an option that Alden estimated to be the most expensive of all options considered (based on lost electrical generation). Importantly, EPA and Alden both found that closed-cycle cooling *is* a technically feasible alternative. However, Mirant challenged this technology based on its cost – arguing that the costs of a closed-cycle cooling system retrofit are "self-evidently significantly greater than" the benefits, from its perspective. While Mirant identified some of those supposed costs (such as noise impacts and aesthetic concerns), it did not, nor can it, make a credible showing that they outweigh the benefits;[1] nor is this the relevant standard, as discussed below. Moreover, EPA has carefully considered these impacts and reasonably concluded that if, for example, mechanical draft cooling towers should give rise to problematic increases in fogging, misting or water vapor, reasonable measures exist to eliminate the problems. Even the estimated net loss of saleable power claimed by Mirant is small, at 2.2 percent of total plant output – and further marginalized given that the plant is operating at only a fraction of its capacity.

For its part, EPA noted that close-cycle cooling would achieve significantly larger reductions in adverse impacts, specifically with respect to entrainment, as compared to alternatives entailing screening. In addition, EPA found that closed-cycle cooling is technically feasible at Canal Station because (1) a cooling tower could be retrofitted to the existing circulating system at the plant, (2) many of the components of the condenser system would remain intact, (3) the flow through the condenser would remain approximately the same, (4) sufficient land is available at the site, and (5) construction could take place independent of the plant's operations.

Ultimately, EPA concluded that closed-cycle cooling would achieve the greatest reductions in adverse environmental impacts and would satisfy the BTA requirements of CWA 316(b). Given the status of the Phase II rule at that time, however, EPA did not definitively determine that closed-cycle cooling was the BTA for Canal Station. Instead, the former draft permit would have allowed Canal Station to pursue one of the five compliance alternatives mandated by the Phase II Rule then extant. See EPA's August 2008 Response to Comments (RTC) at IX-14. From CLF's perspective, the originally drafted permit restrictions, like the Phase II Rule, were contrary to CWA Section 402(a) and 40 CFR 125.95(a)(2)(ii) because they failed to set specific BTA-based entrainment reduction conditions. EPA could and should have set closed-cycle cooling as the BTA even in the Draft Permit that was released prior to the suspension of the Phase II Rule.

[1] In a September 2007 decision regarding a NPDES permit for Brayton Point Station in Somerset, Massachusetts – a permit that likewise calls for closed-cycle cooling technology at an existing power plant – the Environmental Appeals Board (EAB) notably rejected arguments that noise impacts associated with the cooling tower would be inconsistent with Massachusetts' standards or otherwise might undermine the benefits of the closed-cycle cooling. Order Denying Review, September 27, 2007, *In re Dominion Energy Brayton Point LLC*, NPDES Appeal No. 07-01. There is no reason to believe that the result would be different in this instance. With respect to aesthetic concerns, EPA appropriately notes that the existing exhaust tower at Canal Station is over 400 feet tall, much taller than cooling towers will be.

RiverKeeper II and the suspension of the Section 316(b) Phase II Rule:

In January 2007, the Court of Appeals for the Second Circuit agreed with the challenges to the Phase II Rule brought by CLF and a host of other parties. *Riverkeeper, Inc., et al. v. United States EPA*, 475 F.3d 83 (2d Cir. 2007)("Riverkeeper II"). As discussed further in relevant part below, the Second Circuit found that EPA is required to set specific performance benchmarks for BTA under CWA 316(b) based on technology that is truly "best" for minimizing environmental impacts so long as the costs of the technology could "reasonably be borne by the industry," *id.* at 99-100, 107-109; the Court made clear that this is a different standard than traditional cost-benefit analysis. *Id.* at 99-100. The Court further found that EPA may (but is not required to) apply a cost-effectiveness test where the best performing technology is used to set the performance benchmark but cannot be rejected as BTA in favor of another technology unless that other technology achieves essentially the same benefits but at a markedly lower cost. *See id.* at 101. Responding to a petition filed by industry parties in the *Riverkeeper II* case, the U.S. Supreme Court granted *certiorari* with respect to the *Riverkeeper II* decision's holding that the CWA does not authorize EPA to compare costs with benefits in determining BTA to minimize environmental impacts from CWISs.[2]

EPA responded in July 2007 by formally suspending the Phase II Rule. *See* 72 Fed. Reg. 37,107 (July 9, 2007). The notice suspending Phase II explicitly retained in effect the provisions of 40 CFR 125, Section 125.90(b), providing that unless otherwise exempted, "[e]xisting facilities . . . must meet requirements under 316(b) of the CWA determined by the Director on a case-by-case, best professional judgment (BPJ) basis." *Id.* The notice also expressly indicated that EPA was retaining authority to develop BPJ controls for existing facility cooling water intake structures that reflect the best technology available for minimizing adverse environmental impacts. *See id.*

Modifications to the Canal Station NPDES Permit:

In the wake of the suspension of the CWA 316(b) Phase II Rule, EPA reevaluated the conditions in the Draft NPDES Permit for Canal Station, applying CWA 316(b) on a site-specific BPJ basis, no longer informed by the suspended Phase II Rule. A Final NPDES Permit was issued in August 2008. EPA revised the permit conditions based on its BPJ determination that closed-cycle cooling represents the BTA for minimizing adverse environmental impacts from the CWIS at Canal Station. This determination was based on the administrative record, including public comments from Massachusetts Division of Marine Fisheries (MA DMF), Massachusetts Coastal Zone Management Office (M-CZM), the Riverways program of the Massachusetts Department of Fish & Game, and the National Oceanographic and Atmospheric Administration (NOAA), as well as Mirant's comments acknowledging that closed-cycle cooling is technologically feasible at Canal Station and that this technology results in the largest reductions in entrainment and impingement mortality of all the options evaluated in detail. It is important to note, as stated by

[2] That appeal has been fully briefed and oral argument concluded. The U.S. Supreme Court has yet to issue a ruling. For an excellent discussion of the history of CWA Section 316(b) and the issues pending before the Supreme Court, *see* "Brief for Respondents Riverkeeper et al.," filed in the United States Supreme Court, September 2008, in *Entergy Corp. et al. v. Environmental Protection Agency*, Appeal Nos. 07-588, 07-589 and 07-597.

EPA in its August 2008 Response to Comments, that EPA left the door open to alternatives other than closed-cycle cooling technology:

> Although EPA has now definitively determined that closed-cycle cooling is the BTA for Canal Station, it should also be understood that the Final Permit does not *per se* require the installation of closed-cycle cooling.

August 2008 RTC at IX-49. While the permit does not mandate that closed-cycle cooling technology be adopted, it does set entrainment reduction performance requirements based on the performance capability of this technology. In the event that technology other than closed-cycle cooling is utilized, any increased impingement mortality caused by the use of that technology would be considered to offset the entrainment reductions.[3] In addition, the permit leaves room for options among closed-cycle cooling technologies – e.g., mechanical draft or natural draft cooling technologies.[4]

In September 2008, Mirant petitioned the EAB to review the Final Permit. Mirant's Petition focused primarily on procedural issues as well as the EPA's determination that closed-cycle cooling is the BTA in this context. The procedural issues appear to have been rendered moot through the re-noticing of key provisions of the NPDES permit for public comment. CLF addresses issues regarding the closed-cycle cooling BTA determination below.

The Clean Water Act Requires Canal Station to Retrofit with Closed-Cycle Cooling Technology Because It Is the Best Technology Available for Minimizing Environmental Impacts of Impingement and Entrainment

The language of CWA Section 316(b) is instructive: it requires the "best" technology for "minimizing environmental impact."

Support for EPA's decision to include strong environmental protections in the Canal Station NPDES permit is rooted firmly in the plain language of the Clean Water Act. CWA Section 316(b) requires that:

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[3] The Final Permit also includes a "reopener" provision allowing Mirant to seek a permit modification if it "later concludes that the [closed-cycle cooling or comparable performance] requirements . . . do not ensure that the design, location, construction and capacity of the facility's CWIS will reflect the BTA for minimizing adverse environmental impacts," and EPA's August 2008 Response to Comments points out that, if deemed necessary, Mirant would have time to invoke this "reopener" given that EPA expects to issue an Administrative Compliance Order under CWA 309(a) that will specify a reasonable schedule for coming into compliance with the new permit requirements.

[4] The permit language reads as follows: "The design, location, construction and capacity of the Permittee's CWIS shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts of entrainment due to the CWIS. In order to satisfy this BTA standard, the Permittee shall reduce current levels of entrainment of marine organisms through the facility's CWISs to an extent comparable to what would be achieved by the use of closed-cycle cooling for all electrical generating units, with the closed-cycle cooling system optimized to maximize cooling water intake flow reductions to the extent practicable in light of site-specific constraints (e.g., restrictions on chloride discharges)."

> [A]ny standard established pursuant to section 301 or section 306 of the [Clean Water] Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures *reflect the best technology available for minimizing adverse environmental impact*.

33 U.S.C. 1326(b) (emphasis added).

Thus, NPDES permits issued to facilities with CWISs must include limits that reflect the BTA for minimizing adverse environmental impacts. CWA Section 316(b); 40 CFR 125.90(b) and 122.43(b)(3).[5] We agree with EPA's finding that in most cases, the most significant of these adverse impacts are the entrainment and impingement of aquatic organisms, and that minimizing these adverse impacts means "to reduce them as much as possible." August 2008 RTC at IX-9.[6]

Importantly, the BTA standard requires that the specified technology be the "best," meaning that it must reduce the adverse impacts of entrainment and impingement to the greatest degree (unless the technology entails such significant other adverse environmental effects as to warrant being rejected).[7] As the EAB expressed in a 2007 Order regarding an appeal of the NPDES permit for the Brayton Point Station:

> [I]t bears repeating here that the statute requires that the Region's capacity limits reflect 'the *best* technology available for *minimizing* adverse environmental impact.' The statute does not require the Region to determine 'acceptable' levels of impact.

Order Denying Review, September 27, 2007, *In re Dominion Energy Brayton Point LLC*, NPDES Appeal No. 07-01 at p. 53 (emphasis in original, internal citations omitted).

In determining the BTA standard for Canal Station's CWISs, EPA thus appropriately looked to the best-performing CWISs at existing power plants (in terms of achieving the greatest reductions in adverse environmental impacts). August 2008 RTC at IX-24. EPA determined that the best performing facilities are those that have converted from open-cycle cooling to closed-cycle cooling using some type of "wet" cooling tower, and identified a number of facilities that made such conversions to achieve a 70 to 98 percent reduction in entrainment and

[5] In its petition for review before the EAB, Mirant, citing 40 CFR 125.84(c), claims that EPA is applying the "Phase I" rule for new facilities (requiring closed-cycle cooling or comparable technology). EAB petition at 47 ("In effect Region I applied the wrong law."). But no such error has been made and, as discussed throughout this comment letter, EPA aptly applied provisions governing *existing* facilities in determining that closed-cycle cooling is BTA here.

[6] *See The American Heritage Dictionary of the English Language* 1119 (4th ed. 2000); *The Oxford English Dictionary* 815 (2d ed. 1989); *Webster's Third New International Dictionary* 1438 (1971).

[7] The ordinary meaning of "best" is "surpassing all others in excellence." *American Heritage Dictionary, supra* at 173; *see also, Webster's*, *supra* at 208 ("excelling or surpassing all others of its kind"); *Oxford English Dictionary*, *supra* at 139.

impingement. *See* id. at IX-25. Using its Best Professional Judgment (BPJ),[8] EPA appropriately found that such closed-cycle cooling technology is the BTA here to minimize environmental impacts from Canal Station's CWISs. The retrofit contemplated here hardly could be said to be breaking new ground, although it will achieve significant environmental protection gains at Canal Station that EPA estimated in the realm of 1.82 to 3.53 billion eggs and between 130.9 and 311.6 million larvae prevented from being killed annually. *See id.* at IX-29, n. 23.

Moreover, potential alternatives including various types of screening systems (e.g., wedgewire, fine or coarse mesh screens) were found to be entirely infeasible (e.g., because of conflicts with navigation in the Canal) or to provide significantly inferior performance (e.g., screens that would provide an order of magnitude less protection from impingement and entrainment). Here, closed-cycle cooling stands alone as the "best" technology for minimizing environment impacts. EPA thus concluded that closed-cycle cooling technology represents the "appropriate technology" for the category of facilities to which Canal Station belongs.

EPA's analysis did not end there, however, but instead went on to consider other factors in reaching its ultimate BTA determination. *See* August 2008 RTC IX-27 to -45. Factors such as collateral environmental impacts and cost-effectiveness were considered but, as discussed below, EPA appropriately declined to undertake the sort of comprehensive cost-benefit analysis urged by Mirant that would have been contrary to CWA Section 316(b) and *Riverkeeper II.*

CWA Section 316 (b) is a technology-driven mandate not intended to be hamstrung by cost considerations except where they are wholly disproportionate to environmental benefits.

The Clean Water Act decades ago set in motion a robust system for restoring and protecting our waters, with considerations of cost mitigation tempered by a commitment to force real progress in improving water quality. While some provisions of the CWA have used a "best practicable technology" standard that called for cost-benefit analysis to determine the economic practicability of measures before they have been adopted as permit conditions, Section 316(b)'s "best technology available" standard calls for a different, technology-driven, analysis.

In *RiverKeeper II*, the Court notably held that "[w]e conclude . . . that the language of section 316(b) itself plainly indicates that facilities must adopt the *best* technology available and that cost-benefit analysis cannot be justified in light of Congress's directive." *RiverKeeper II* at 99 (italics in original, underlining added for emphasis). The Court cited its previous decision in *Riverkeeper I*, 358 F.3d at 185, where it had reasoned that EPA "should give decreasing weight to expense as facilities have time to plan ahead to meet tougher restrictions."

As acknowledged by the Court in *RiverKeeper II*, EPA may consider costs in determining BTA in only two respects: (1) to determine what technology can be "reasonably borne" by the industry and (2) to engage in cost-effectiveness analysis in determining BTA. *See RiverKeeper II* at 99-100. EPA appropriately resolved the former issue in connection with preparing the Canal Station NPDES permit conditions by considering the most effective technology for reducing

[8] *See Natural Resources Defense Council v. United States Environmental Protection Agency,* 863 F.2d 1420, 1424-25 (9th Cir. 1988).

impingement and entrainment at the best performing "Phase II" facilities. With respect to the latter issue, EPA's analysis appropriately has been limited to considering whether there are less expensive technologies available that achieve "essentially the same results as the benchmark." *Id.* at 100. In other words, if two or more technologies are available that achieve the same performance benchmark but happen to have widely disparate costs, it makes sense to allow compliance through the less expensive – yet equally protective – option.[9] EPA satisfied these requirements here by (1) setting the performance benchmark with closed-cycle cooling technology; and (2) allowing Canal Station to comply either by retrofitting with closed-cycle cooling or by adopting other measures that are shown to have the same performance as closed-cycle cooling in terms of minimizing environmental impacts.

Mirant urges EPA to undertake the sort of cost-benefit analysis that would fly in the face of CWA Section 316(b).

Mirant ignores both the plain language of CWA Section 316(b) and the considerable value of marine fish resources arguing, in effect, that it is "just too expensive" for it to install the same environmentally protective closed-cycle cooling water system that is being used to retrofit other existing power plants (including nearby Brayton Point Station). As Mirant would have it, "[a]t a projected cost of $122.2 million, even without detailed cost-benefit analysis, the cost of this option is self-evidently 'significantly greater' than the benefits and could not be justified under the Phase II Rule." August 2008 RTC at p. IX-4 to -5. But given the billions of fish eggs and larvae, and hundreds of thousands (or millions) of fish lost to Mirant's cooling water system each year,[10] it is far from "self-evident" to CLF that the cost of retrofitting with closed-cycle cooling technology is so large as to warrant adoption, instead, of technology having a lower cost but affording considerably inferior environmental protection. Nor is this the appropriate test, as discussed above.

Mirant's misapprehension of the applicable test for determining BTA is evident in its petition for review of the Canal Station NPDES Permit before the EAB. There, Mirant is entirely off the mark in arguing that the First Circuit's decision in *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 306 (1st Cir. 1979) somehow supports the proposition that "an intake technology is not required if its cost is excessive compared to its benefits." Petition for Review at 50. This is not at all what the First Circuit Court actually held, nor is it an accurate statement of the BTA Standard. In *Seacoast Anti-Pollution League*, the First Circuit found that intake technology improvements were appropriately rejected by EPA where the costs are "*wholly disproportionate"* to any environmental benefit. *Id.* at 311 (emphasis added). In that case, the EPA Administrator rejected petitioners' request to require project modifications that would entail only very "slight" environmental benefit at a cost of over twenty million dollars (in 1970's

[9] It is important to keep in mind, as the Court in *RiverKeeper II* emphasized, that "EPA is by no means required to engage in cost-effectiveness analysis. Indeed, to require the Agency to conduct cost-effectiveness analysis would transform such analysis into a primary factor in choosing BTA, which clearly is contrary to the technology-forcing principle that animates the CWA." *Id.*

[10] CLF – and the record – do not agree with Mirant's assertion (EAB Petition at 61) that mortality for entrained organisms might be significantly overestimated.

value), and the First Circuit declined to disturb this decision. *Id.*[11] This is consistent with precedent on Section 316(b) – only where the costs of the technology are wholly disproportionate to the environmental benefits can economic costs even be considered.[12]

Mirant appears to be calling for classic cost-benefit analysis here, which is not appropriate. *See* EAB Petition at 73. As discussed above and as EPA aptly noted in the August 2008 RTC (at p. IX-22), "under *Riverkeeper II*, EPA is not required to, and indeed is barred from, undertaking the type of cost-benefit-based decision-making urged by Mirant."[13] Section 316(b) leaves no room for EPA to conclude that the benefits are not worth the costs of the best available technology for minimizing environmental impacts.

While Mirant argues that EPA must take cost into account where technologies with substantially similar benefits have significantly disparate costs, the alternative technologies it raises for consideration in the context of Canal Station have dramatically inferior performance to that of closed-cycle cooling and thus cannot form the basis of comparison. Mirant likewise misses the mark in arguing that EPA's analysis on the closed-cycle proposal was based on a "generic" cost model developed by the Electric Power Research Institute (EPRI), a model that Mirant claims "is not intended, or appropriate, for analyzing detailed costs at individual plants." EAB Petition at

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[11] Indeed, this "wholly disproportionate" test has been applied by EPA in contexts including the NPDES permit for Brayton Point Station. As acknowledge by the EAB in the September 27, 2007 Order Denying Review in that case, EPA had considered "whether the cost of the 'best' technology was 'wholly disproportionate' to the environmental benefits gained," and "ultimately concluded that the benefits of closed-cycle cooling [at Brayton Point Station] far outweighed the costs." The "wholly disproportionate" test, if credibly applied, appears consistent with the test of whether a technology can "reasonably be borne by industry."

[12] *In the Matter of Pub. Serv. Co. of New Hampshire, et al.*, 1 E.A.D. 332, (1977 EPA App. LEXIS 16, *21 (1977)) (explaining consideration of costs via "wholly disproportionate" test is a secondary consideration, consistent with the legislative history and court decisions on section 316(b)).

[13] Section 316(b) makes no specific mention of cost considerations and the legislative history of Section 316(b) only requires that the chosen technology be commercially available. *See* Remarks of Rep. Clausen, House Consideration of the Report of the Conference Committee, 1972 Legislative History at 264 (BTA "is intended to be interpreted to mean the best technology available commercially at an economically practicable cost"). Section 316(b) has been interpreted not to require a formal cost benefit analysis, but a determination that the costs are not wholly disproportionate to the environmental benefit. 41 Fed. Reg. 17388 (April 26, 1976); *Public Service Company of New Hampshire*, 1 E.A.D. 332, *21. Application of the "wholly disproportionate" test as a secondary consideration is consistent with the legislative history and court decisions, which consistently state that the CWA was meant to force new technologies on existing pollution sources in ways that might cause economic impact on power plant operations. Congress even accepted the prospect of significant costs to power plants that could result in plant closings and lost jobs. Before passing the Clean Water Act, Congress reviewed a report predicting 200 to 300 plant closings and specifically rejected a proposal to allow pollution discharge variances based on economic hardship. *See* U.S. Council on Environmental Quality, Dept. of Commerce, & EPA, The Economic Impact of Pollution Control (1972). *See* Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., at 156, 523 (1973). *See also United States Environmental Protection Agency v. National Crushed Stone Ass'n*, 449 U.S. 64, 79-81 (1980) ("Instead of economic variances, Congress specifically added two other provisions to address the problem of economic hardship [- a loan program for small business and an employee protection provision.]")

51. Not only is "generic" information appropriate for determining whether a technology "can be borne by industry," but EPA also relied on *other* evidence in the record in addition to the EPRI data – including evidence of other old power plants retrofitting with closed-cycle cooling technology – in determining that closed-cycle cooling technology is "available" (and that its costs can "be borne by the industry").

Mirant's other cost-related objections similarly should be rejected out of hand as lacking merit, including its assertions that (1) it will not be able to recover the upgrade costs; (2) a retrofit would "make the Station less economical than it currently is"; and (3) that the retrofit would "do nothing to increase [the plant's] remaining life." EAB Petition at 63. These considerations, even if proven, do nothing to undercut EPA's finding pursuant to Section 316(b) that closed-cycle cooling technology is the best available technology, can be borne by industry, and must be required here.

Electric system reliability concerns should not stand in the way of retrofitting Canal Station with closed-cycle cooling technology.

EPA should continue to reject as unfounded Mirant's repeated suggestions that a closed-cycle cooling retrofit at Canal Station would risk disruption of the power supply to southeastern Massachusetts. Mirant's alleged concerns are belied by Canal Station's operation at very limited capacity, reflecting that the facility is often no longer needed.

Mirant claims that "[t]he shutdown of the Canal Station would cause serious reliability impacts, disrupting the reliability of electric supply to the public." EAB Petition at p. 69. Mirant even goes so far as to urge that "[E]ven a temporary shutdown of the Canal Station, during the retrofit period, would result in reliability impacts in SEMA." *Id.* at 71.

However, Mirant at the same time admits that in 2007 the plant was operating only at 23 percent of capacity (EAB Petition at 66), at least in part because of higher fuel oil prices. Mirant also admits that, in April 2008, Massachusetts DPU approved a request made by NSTAR Electric to construct and operate new transmission equipment in southeastern Massachusetts (SEMA), the need for the plant to operate to support the transmission system consequently may decline, and the new transmission capacity will further reduce the need for the Canal Station. *Id.* at 68. Moreover, the Independent System Operator-New England (ISO-NE) estimates that the Canal Station will operate *only about 50 days per year* once the already-approved upgrades are complete.[14]

[14] EAB Petition at p. 68, citing Kowalski, Richard V., "Lower Southeastern Massachusetts (SEMA) Short-Term Upgrades," 2008, Holyoke, Massachusetts, ISO New England Inc. *See also,* the ISO-NE 2008 Regional System Plan, which states that "For lower southeastern Massachusetts (Lower SEMA), a proposed short-term transmission plan is being developed to improve reliability and reduce current significant out-of-merit operating costs. The plan includes improving the 345 kV and 115 kV transmission lines and adding voltage support devices in the 2008 to 2009 timeframe. Long-term alternatives are under study and include the addition of either a new 345 kV transmission line (from a yet-to-be-selected origination point on the mainland) or possibly a new 115 kV line from Manomet, MA, across the Cape Cod Canal. Extending the 345 kV facilities further into Cape Cod also might be necessary." Available at http://www.isone.com/trans/rsp/2008/rsp08_final_101608_public_version.pdf.

Thus, it appears that ample time is likely to be available for a scheduled shutdown (presumably avoiding the summer peak period) when the final stages of a cooling system retrofit could be implemented. Moreover, as EPA aptly notes, the facility's once-through cooling system is 30 to 40 years old and has likely surpassed its originally expected useful life, and technological advances have developed since its installation. As a result, it seems reasonable to upgrade the equipment at this time in any event.

The costs of closed-cycle cooling are not so onerous as to alter EPA's BTA determination.

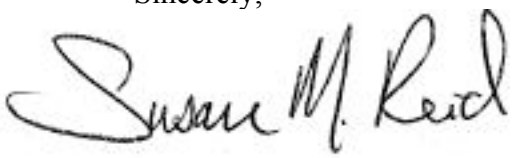
Finally, it is worth noting that the cost of a closed-cycle cooling retrofit is more reasonable than it might appear, once amortization over the life of the technology is taken into account. Mirant argues that a closed-cycle cooling retrofit would cost $122.2 million, presumably building on the $108 million figure cited by its consultant (Alden) with respect to initial capital investment costs, and adding operation, maintenance, and other ongoing costs. As EPA points out, even if this is a reasonable estimate, the costs should be considered in light of the two to three decades, or more, of useful life that the equipment would likely remain in service. *See* August 2008 RTC at IX-34. Particularly given that Canal Station is operating at substantially reduced capacity (20 percent of capacity in 2006, according to EPA), Mirant's claim that the retrofit would entail an annual cost of nearly twelve million dollars in lost electricity sales due to increased "parasitic load" at the facility and decreased efficiency appears grossly exaggerated and entirely unreasonable. In addition, EPA considered Mirant's financial health and reasonably concluded that it could bear the cost of the closed-cycle cooling retrofit. *See* August 2008 RTC at IX-35.

Conclusion:

In light of the foregoing, CLF supports EPA's determination that closed-cycle cooling technology is the BTA here, and urges EPA to retain the provisions in the Final NPDES Permit for Canal Station that require the facility's CWISs to meet the performance standards of this technology. The technology clearly is available to reverse decades of impacts on fish and other marine resources in Cape Cod Canal, Cape Cod Bay and Buzzards Bay – and Section 316(b) of the Clean Water Act now requires that it be deployed.

Thank you again for the opportunity to provide these comments.

Sincerely,



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cc: Paul Hogan, MA DEP (Worcester)