

further consideration after Mirant Canal has the opportunity to comment on the Region's newly stated rationale.

**d. Outfall 002 discharge flume water depth and "minimal stress"**

Part I.A.3.d requires that the Outfall 002 discharge flume have sufficient water depth to return impinged organisms to the Cape Cod Canal with "minimal stress." The requirement was not in the draft permit.

Accordingly, Mirant Canal appeals this requirement because it has had no opportunity comment. Had it been able to comment, Mirant Canal would have said that "minimal stress" is vague and undefined and gives no notice of what is required for compliance, nor is there an adequate record on how much depth is needed for minimal stress. Also, as noted above, there is tension between this requirement and the prohibitions on discharge of condenser water at Outfall 002 under certain conditions. The Region has not considered how flows in the discharge flume are to be maintained without the ability to discharge condenser waters during screen-washing and chlorination.

Also, this requirement is in conflict with the separate requirements at Part I.A.13.e for Mirant Canal to construct two new fish return troughs above and below the CWISs to deliver fish in line with the tidal flow. If those return troughs are installed, there is no reason for the permit to require this flow within Outfall 002 itself. Mirant Canal seeks review of this provision in part to reconcile those conflicting requirements.

**e. Other physical and operating changes to the CWISs**

Part I.A.13 includes several additional requirements to make physical modifications or change operating procedures for the CWISs that Mirant Canal requests the Board to review for the following reasons.

Part I.A.13.b requires Mirant Canal to equip all traveling intake screens with fish holding buckets to hold collected organisms in at least two inches of water while they are lifted to the fish return system.

Part I.A.13.c requires the installation of a low-pressure screen spray wash engineered to deliver aquatic organisms from the fish holding buckets to the return trough with “minimal stress.”

Part I.A.13.e requires reconfiguration of the fish return system so as to return fish, again with minimal stress, so that they are headed with the tide away from the CWISs. In other words, Mirant Canal would be required to re-engineer these CWISs to install new return troughs, not at Outfall 002, but at new locations above and below the CWISs, and to operate those return troughs in accordance with the tidal cycle.

Mirant Canal seeks review of all of those provisions because the record does not adequately support the need for such major changes to the CWISs. Given the low levels of impingement at the Station, the Region has not adequately considered whether these modifications would bring any actual improvement so as to warrant the major expenditures involved. As Mirant Canal commented on the draft permit, these changes essentially would require complete reconstruction of the CWISs, as well as involving substantial permitting for the new fish return facilities. The Region and the record do not support the need for such improvements.

Part I.A.13.e also mandates that the fish return troughs should not allow any “vertical drop” of fish into the Canal. In its comments on the draft permit, Mirant Canal established that the return directly into receiving water causes equivalent stress to the returned fish as a vertical drop. In the Response to Comments, the Region attributed this requirement to a concern for

predation by gulls that could congregate at an open air trough. The sole basis for this concern is that unidentified biologists have observed how gulls congregate around the fish return at a different power plant that has a much higher amount of impingement. Response to Comments, IX-83. Those anecdotal observations are not part of the administrative record for this permit, and Mirant Canal has not had the opportunity to comment on whether they are pertinent to the Canal Station. In light of the low levels of impingement at the Canal Station, the Region has not adequately justified this requirement.

Mirant Canal also seeks review of the portions of Parts I.A.13.c, I.A.13.e and I.A.14.b regarding “minimal stress” for the same reasons as described above with respect to portion of Part I.A.3.d concerning “minimal stress.”

Part I.A.13.d requires continued rotation of the intake screens during chlorination, and also, with respect to screen wash water, requires use of non-chlorinated water sources or dechlorination of screen wash water prior to discharge. The asserted basis for these requirements is to reduce or eliminate exposure of impinged fish to chlorination in the screen wash water and the Outfall 002 discharge. There is no adequate basis in the record, however, for these requirements, because the Region has not analyzed whether the low levels of chlorine in the screen wash water and its discharge, given the brief duration of exposure to the impinged organisms, has had or is likely to have any adverse impact. The required changes would be extremely expensive and burdensome to implement, and should be required only upon an adequate record that they are necessary and would bring actual benefits.

Part I.A.13.f requires continuous operation of the intake screens once the fish return system has been reconfigured in accordance with the foregoing requirements, whenever the corresponding intake pumps are operating. If by continuous operation the permit means to

require continuous rotation of the screens, Mirant Canal seeks review of this provision because the record provides no adequate basis for EPA's determination that continuous rather than periodic rotation will have material benefits.

Finally, Part I.A.14.b requires separation of live fish and "natural" debris (such as seaweed) trapped on intake screens from all other materials trapped on the intake screens, and requires disposal of all such other materials in some other lawful place than discharge through Outfall 002. In effect, this requirement compels installation of a system to separate such trash that comes in through the intakes and deposits on the screens from the fish and the seaweed that deposit on the screens. The record does not include any explanation of how this could occur, or as to why the amount of such trash coming from the Cape Cod Canal would be problematic to return to the Cape Cod Canal. In fact, other than hand separation by personnel devoted to that task, Mirant Canal is not aware of any method to achieve such separation. Mirant Canal seeks review of this provision, as well, because it is arbitrary, capricious and without adequate support in the record.

**11. Cooling Water Intake Structure to Reduce Entrainment Comparable to Closed-Cycle Cooling (Parts I.A.13.g.i & .ii)**

Part I.A.13.g of the draft permit, characterized as a "BPJ" decision, required Mirant Canal to comply with EPA's then-current intake structure rules for existing facilities, 40 C.F.R. 125 Subpart J, particularly for reducing entrainment of marine organisms. The final permit, in contrast, requires Mirant Canal to reduce entrainment of marine organisms "to an extent comparable to what would be achieved by ... 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..." (Part I.A.13.g).

Mirant Canal may either install closed-cycle cooling for both units or find an alternative technology.

Mirant Canal appeals this requirement on three grounds:

1. The intake structure requirement was, as Region 1 says, “significantly revised” (Response to Comments IX-1). But contrary to what the Region says, the change was not a “logical outgrowth” of the proposal.

2. The Appeals Board should protect the integrity of its jurisprudence and precedents. Appeals Board law says that a permit should be reopened for comment if a change is not a “logical outgrowth” of what was proposed. Affirming the change to the cooling system required by Region 1, without opportunity for comment, would make the “logical outgrowth” test meaningless. In effect, almost *any* change would count as a “logical outgrowth.”

What the Region did in this case was (1) permit once-through cooling for years using a “best professional judgment” interpretation of § 316(b), (2) propose a detailed study, characterized as a BPJ decision but based on a new regulation, and then (3) return to the same “best professional judgment” regime used before the rule, but now require a complete change of the Station’s cooling system. If this is a logical outgrowth, then anything is.

3. The record is inadequate to support the Region’s decision that closed-cycle cooling is best technology available. In part it is inadequate because Mirant Canal did not have adequate opportunity to comment. While the Region relied on a 2003 report by Alden, that report was based on information not specific to the Mirant Canal site. It was not the sort of analysis that needs to be done to justify closed-cycle cooling *at a particular site*.

What Region 1 did in the final permit, in effect, was apply EPA’s “Phase I” rule for *new* facilities, which does not apply to the Canal Station. The Phase I rule requires closed-cycle

cooling or a comparable technology. 40 C.F.R. § 125.84(c), (d). In effect, Region 1 applied the wrong law.

**a. Not a logical outgrowth**

This new closed-cycle cooling requirement is not a “logical outgrowth” of the draft permit. The change from a detailed study (in the draft permit) to a decision that no study is needed (in the final permit) is a 180-degree change of course. A “logical outgrowth” might include a change in the details of the study, but not a leap to a conclusion that the study might not have reached at all.

The study proposed in the draft permit (called a Comprehensive Demonstration Study or CDS) would have required the Permittee to develop data on the following:

- Taxonomic identifications of all life stages of fish, shellfish, and protected species that are susceptible to impingement and entrainment;
- A characterization of all life stages of fish, shellfish, and protected species that are susceptible to impingement and entrainment;
- Documentation of the current impingement mortality and entrainment of all such species and an estimate of impingement mortality and entrainment to be used as the “calculation baseline”;
- A description of the intake technologies and operational measures that will be used to reduce impingement mortality and entrainment;
- Calculations of the reduction in impingement mortality and entrainment that would be achieved;
- Design and engineering calculations, drawings and estimates to support the descriptions of intake technologies; and

- A plan and schedule for installing and maintaining whatever technology is selected as best based on the study.

See 40 C.F.R. § 125.95(b) (now suspended). These are EPA's judgment about what kind of information is needed to determine "best technology available." These requirements are reflected in the Proposal for Information Collection ("PIC") (Oct. 6, 2006) that Mirant Canal submitted to the Region (A.R. 29). It included a detailed Appendix B putting forth a plan for evaluating impingement mortality and entrainment at the Canal Station and an Appendix C on deriving the economic benefits of reduced impingement and entrainment.

The CDS study, moreover, was to be done in the context of EPA Headquarters' determination that closed-cycle cooling is *not* "best technology available" categorically. See 69 Fed. Reg. 41,607 (July 9, 2004). And the study would have been designed to meet national performance standards of reducing impingement mortality 80-95% and entrainment 60-90%.

After Mirant Canal filed its comments on the draft permit, EPA Headquarters suspended the rule on which the draft permit requirement was based and returned to the regulatory regime that had existed before, which calls for a case-by-case, "best professional judgment" decision on what is best technology for each plant. 72 Fed. Reg. 37,107 (July 9, 2007). This means that, at present, decisions on intake technology must be aimed not necessarily at meeting numerical performance standards of 80-95% and 60-90% but at minimizing "adverse environmental impact" in light of the statutory factors for technology-based requirements (cost, energy requirements, and non-water quality environmental impact). In this decision making, the impact on the fish in the receiving waterbody is important. And data on costs and biology are important data such as would be gained from the study Mirant Canal proposed in 2006, as required by EPA.

To change from a decision under EPA's rule aimed at meeting numerical performance standards to a decision based on minimizing "adverse environmental impact" is a significant change, as the Region says. Moreover, using best professional judgment after the Phase II rule was suspended requires a site-specific study at least as much as a purportedly "BPJ" decision drawing on the rule. And it requires the permitting agency to consider cost, energy supply, air pollution, and the other statutory factors.

Whether the decision is made using the suspended rule or under a purely "best professional judgment" regime, cost must be considered. Under the law of the First Circuit, which applies to EPA Region 1, an intake technology is not required if its cost is excessive compared to its benefits. *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 306 (1st Cir. 1979). Even if the Region were to follow the Second Circuit decision *Riverkeeper*, 475 F.3d 83, a technology is not required if its cost cannot be "reasonably borne" or if it is more expensive than another technology that would achieve essentially the same results. The Supreme Court is reviewing this Second Circuit decision, with EPA and the Department of Justice arguing that the decision is wrong. They have said that permitting authorities will no longer be able to consider the relationships between costs and benefits "[a]t least in the Second Circuit." Brief for the Federal Respondents in Opposition, *Entergy Corp. et al. v. Riverkeeper, Inc. et al.*, Nos. 07-588 et al., at 15 (March 2008). And EPA and the Department of Justice have told the Court that "the legal framework followed for more than 30 years has provided for EPA and state permitting authorities to consider the relationship between costs and benefits, as shown by *Seacoast Anti-Pollution League*. Brief for the Federal Parties as Respondents Supporting Petitioners, *supra*. at 27.



Region 1 did an analysis, to be sure. See Response to Comments IX-23 to IX-46. But Mirant Canal had no opportunity to comment on it. The Region's analysis on which it based its requirement for closed-cycle cooling was done entirely after comments were filed and revealed for the first time in the Response to Comments. Also, the analysis was done at a conceptual level, not a site-specific one, and it was inadequate to meet EPA's standards for determining best technology available.

The new requirement for closed-cycle cooling is not a "logical outgrowth" of the draft requirement for a detailed study; if Mirant Canal had known the Region was proposing closed-cycle cooling, it would have commented on at least the issues summarized below.

**b. Mirant Canal would have commented on a closed-cycle proposal**

Mirant Canal's analysis of the cost of retrofitting cooling towers, done by Alden, was based on a generic cost model developed by the Electric Power Research Institute ("EPRI"). The model has since been updated, but even so the EPRI model is not intended, or appropriate, for analyzing detailed costs at individual plants.

As the 2003 Alden report says (p. 5-1), its costs were based on "quantities developed from conceptual designs ... and historical data from other projects." Alden intended the estimates only to identify the "relative cost differences between alternatives" (p. 5-1). A number of assumptions were made (p. 5-1), and the data base costs do not include several types of cost that "should be included to estimate total capital costs" (p. 5-1).

Retrofits of closed-cycle cooling at already-built plants are different from installation at new facilities. For new facilities the location of the towers relative to the condensers, the condensers themselves, and the type of tower (mechanical draft, natural draft, or hybrid) are planned in a logical manner appropriate to the operation of the facility and in terms of the economics of the overall facility. This is *not* so for retrofits. As a result, the costs and

practicability can be quite different. There are only a handful of documented cases (approximately six of 414 plants) of existing once-through cooling facilities that have been retrofitted.

**i. Cost considerations for determining whether closed-cycle cooling is best technology available**

If closed-cycle cooling had been proposed in the draft permit, Mirant Canal would have done a more detailed analysis of issues that are critical to determining the cost, and therefore the feasibility, of retrofitting closed-cycle cooling. Region 1's analysis neglected these factors altogether or treated them only superficially:

- 1. Space Required for Towers.** How many square feet of space would be required for cooling towers? (Alden concluded there was existing space but did not provide a detailed analysis of the size of the towers.)
- 2. Location of Towers.** Where on the property would a cooling tower be built? This has a major impact on cost because available space could require relocating existing infrastructure that would interfere with new piping for the towers. Tower location also affects noise and visual effects on the surrounding community.
- 3. Type of Tower.** Whether wet mechanical draft, natural draft, or hybrid cooling towers would be required is uncertain, as acknowledged in the Response to Comments. Since any of these towers could potentially be required for this site, all of them should have been evaluated in detail. The types of tower differ in their capital and operation-and-maintenance ("O&M") costs, space requirements, and environmental impacts. Alden considered only mechanical draft towers in its analysis, and the Region's analysis of natural draft towers is based on a newspaper

article. Mirant Canal would have conducted a detailed analysis of these alternatives if a draft permit based on closed-cycle cooling had been published for comment.

4. **Soil Conditions.** Rock, soft sediments, and wet soils can make installing recirculating water lines and support for the tower basin very costly. An analysis of soil conditions should be done.
5. **Cost of and Need for Environmental Controls.** Additional environmental controls might be needed if closed-cycle cooling were installed at the Canal Station:
  - a. **Plume Abatement.** Alden and Region 1 assumed that plume abatement would be required based on the Canal Station's location. Plume abatement hardware can double or treble the capital cost of cooling towers. The plume from cooling towers can be large. The cost of plume abatement depends on whether the plume must be abated for aesthetic reasons all of the time, day and night, or only part of the time.
  - b. **Noise Abatement.** Region 1 considered the cost of noise abatement, but the details of the method it used for its analysis were not revealed. Informed comments on the requirement for closed-cycle cooling cannot be done without knowing the complete methodology and results of the Region's noise analysis. A significant factor in such an analysis is where the towers are situated relative to the property boundary. It is not clear from the Response to Comments where the cooling towers are assumed to be located in Region 1's analysis. State or local ordinances requiring noise abatement could significantly add to the cost of closed-cycle cooling. Because of these uncertainties, no one knows whether the Station could meet noise limits for the cooling towers. At least a conceptual

noise evaluation would be needed to determine if it is possible to meet the legal noise standards for natural draft or mechanical draft cooling towers.

**c. Wastewater Treatment.** Cooling towers will produce a new wastewater stream (cooling tower blowdown) that may have to be treated. Chlorine and other chemicals used in the tower must be periodically discharged in the form of blowdown. Indeed, Part I.A.2.f of the permit has new limits for cooling water blowdown, but the cost of treating it was apparently not considered. Saltwater cooling in particular requires more frequent intake of water and blowdown to discharge salt buildup. There is less experience in the United States with saltwater cooling towers than with freshwater ones. Because the permit requires the intake and blowdown to be optimized to minimize use of intake water, the water volume, cooling tower chemicals, and blowdown characteristics need to be evaluated to determine the costs of operating and managing cooling towers.

- 6. Reinforcing the Cooling System.** The condensers, tunnels, and piping need to be evaluated to determine if they can tolerate the increased condenser and piping pressures from closed-cycle cooling. Replacing the piping and condensers might be necessary. This can be a major contributor to cost.
- 7. Increased Energy Penalty.** Due to significant changes in fuel costs, the annual energy penalty costs may be higher than Alden calculated. Rising fuel costs have dominated newspaper headlines recently, and Region 1 should have considered them in its analysis.
- 8. Higher Capital and O&M Costs Due to Higher Fuel Prices.** Operating costs resulting from fuel costs have significantly increased. In addition to the direct

higher fuel cost, there have been increases in other costs that would affect retrofitting, like transportation costs and materials. Recent experience is that prices quoted by materials vendors change quickly. These higher costs would materially affect the cost of retrofitting cooling towers. These higher fuel-related costs occurred after the draft permit was published; they are public knowledge but were not considered in issuing the final permit.

9. **Circulating Water Lines Affected by a Retrofit.** In a retrofit, the layout of the cooling water systems changes. In some cases existing circulating water lines for ancillary facility operations or support must be relocated. The cost of relocating them can be significant.
10. **Seasonal Energy Impacts.** As noted in Region 1's Response to Comments (page IX-42), converting to closed-cycle cooling would decrease the amount of power generated for two reasons. First, cooling efficiency would be reduced (*i.e.*, there is a heat rate penalty) because the temperature of closed-cycle cooling water is warmer than Canal water. Second, some power from the facility is used to operate the cooling tower pumps and fans. As Region 1 notes, the energy penalty would vary depending on the type of towers used. Region 1 refers to the Alden estimate of 2.2%, an annual average. However, Region 1 failed to consider that the energy penalty varies on a seasonal basis. In summer it may be more than twice the Alden estimate due to higher temperatures during peak energy demand. The energy penalty will depend on Mirant Canal's capacity utilization, which may change in the future (when new transmission lines are brought into service, for example). The energy impact will be more significant in years in which Mirant Canal has low

utilization and operates mostly in summer. Thus an analysis of seasonal differences and capacity utilization is critical for determining whether a retrofit is economically feasible for the Canal Station, but Region 1 did not do such an analysis.

- 11. Cooling Water Intake Structure.** Region 1 should have determined whether a new intake structure would be needed to accommodate cooling towers. Whether the present intake structure and pumps would be appropriate once cooling towers were added, or whether a completely new intake would be needed, was not considered by Alden or Region 1. A new intake structure and new pumps would significantly affect the cost of retrofitting.
- 12. Reoptimization of Condensers.** For some power plants being retrofitted with cooling towers it makes sense to replace the condensers to avoid the heat rate energy penalty. It is unlikely this would be economical for the Canal Station (at least at its current capacity utilization), but the possibility of replacing the condensers should be considered.
- 13. Permitting Costs.** The costs of getting permits are likely to be significant because of the numerous federal, state, and local licenses and permits that would be required to build cooling towers.

**ii. Environmental impacts of cooling towers**

Second, had Mirant Canal been allowed to comment on Region 1's closed-cycle cooling analysis, it would have addressed the environmental impacts of closed-cycle cooling. These impacts could make a retrofit infeasible because necessary permits could not be obtained. In particular, Mirant Canal would have commented on the following impacts identified by Region 1:

**14. Visual Aesthetics.** Mirant Canal pointed out that the sight of large cooling towers is a potentially significant impact. Region 1 concludes this impact is not significant because this is an industrial site and because the reduced impingement and entrainment of fish will compensate. But the Mirant Canal site is in a multiuse area, not merely an industrial site. Natural draft towers might well be necessary and would dominate the site visually for hundreds of thousands of tourists that cross the Sagamore Bridge to Cape Cod each year,<sup>1</sup> recreational boaters who use the area, people who use the recreational walking trail, and those living in the local community.

**15. Vapor Plume Effects (Transportation Safety, Icing, and Visual Aesthetics).**

While Region 1 acknowledges that the plume from cooling towers raises potentially significant issues, it believes the impact can be mitigated by installing technology to control the impacts. Region 1 also states that if public safety issues occur, Mirant Canal can shut down temporarily. However, Region 1 failed to consider the cost of shutting down or the impact of shutting down on energy production and supply. As an alternative, Region 1 suggests that an early warning system for icing could be developed so the Massachusetts Department of Public Safety could warn the public and begin salting roads. However, the Region's analysis does not discuss what a warning system would cost or provide any realistic analysis of how it would work.

**16. Salt Drift.** Region 1 dismisses salt drift from cooling towers by saying that drift eliminators would be installed, that salt deposition would not be much above ambient, and that the effects would be localized. But there is little experience to

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<sup>1</sup> The Cape Cod Chamber of Commerce, <http://ecapechamber.com/cape-cod-chamber-tourism-statistics.asp>, records 181,557 visitors to the Route 25 visitor center in 2007 and 33,854 to the Route 6 visitor center.

base these conclusions on, because saltwater cooling towers are not common in the United States. Region 1 reasons that because drift eliminators can reduce salt deposition to 0.0005%, it is not a problem. But a quick calculation, assuming Canal Station's cooling water flow is 360,000 gpm and 1.5 cycles of concentration in the tower, shows that 45 lbs/hr of salt drift would still be generated, amounting to approximately 180 tons/yr. While the area affected by this drift would be localized, precisely where it would go and what it would affect depend on the wind direction and where the towers were placed on the property. Thus there is a potential for impacts to the local marina or nearby property owners.

17. **Noise.** As noted above, Region 1 did conduct an analysis of noise for Mirant Canal, using Brayton Point information. But the analysis did not consider where on the site the towers would be placed, which determines distances to receptors. Also, the Region acknowledges that this analysis is inadequate to determine whether towers will comply with Massachusetts noise standards and whether noise mitigation will be required. Region 1 says it is unclear whether noise was considered in the Alden estimate. In fact neither noise nor any individual site factor, other than plume abatement, was considered in the analysis. Had Mirant Canal had the opportunity to comment, it could have performed a detailed site-specific assessment rather than a rough estimate based on a different facility. Region 1's analysis did find a potential 25% increase in noise but indicated that this should not be a problem. However, local stakeholders who would be subjected to the noise were denied the opportunity to comment.



**18. Air Emissions.** Region 1's analysis finds that there may be a small increase in air emissions of 2.2% due to the energy penalty but that this is minor and would be compensated for by Canal's reduced capacity utilization. The Region recognizes that the cooling towers will have to comply with fine particulate air standards and acknowledges that cooling towers do cause significant air impacts. However, the 2.2% represents an annual average. The penalty can more than double during summer peak generation periods due to the higher heat rate then. If, as Region 1 says, Mirant Canal's generation is likely to be confined to the peak generation period, the energy penalty could be significantly underestimated in the Region's analysis. Region 1 believes that the increase in air emissions from increased generation to offset the energy penalty will not impact human health, but no information is provided to support this conclusion, and no studies have been performed. Again, local stakeholders who will be subjected to increased fine particulates have been denied the opportunity to comment.

**19. Potential Environmental Impacts of a Retrofit Not Discussed by Region 1.**

Region 1 also does not discuss other potential environmental impacts:

- a. Terrestrial impacts to nearby vegetation;
- b. Solid waste generated by sediments in the cooling tower basin;
- c. Potential for bird collisions with the towers if bird flyways are nearby;
- d. Impacts to local transportation while the towers are constructed;
- e. Reduced property values because of the visual impact of towers; and
- f. Impacts to tourism, a major industry on Cape Cod.

Mirant Canal was not the only person denied the opportunity to comment on these environmental impacts. Local residents and governments are highly likely to have commented had the draft permit openly proposed massive cooling towers and related impacts.

**iii. Issues raised by Region 1's analysis of "adverse environmental impact"**

Third, Mirant Canal would have commented on the following ways in which Region 1's analysis is inadequate or incomplete, considering that between draft and final permit the analysis changed from meeting numerical performance standards to a best professional judgment of how best to minimize adverse environmental impact:

**20. Minimizing adverse Environmental Impact Instead of Meeting Numerical**

**Standards.** EPA's Phase II rule was based on numerical standards for reducing impingement mortality and entrainment. Before the rule, "best professional judgment" determinations were based on an analysis of adverse environmental impact. Region 1 in its Response to Comments limits its adverse environmental impact determination to numbers of fish impinged and entrained rather than the impacts on fish populations. It appears that Region 1 also disregarded equivalent adult loss estimates provided by Mirant Canal; the Fact Sheet, at least, did not refer to the equivalent adult estimates for impingement. Mirant Canal provided estimates of equivalent adults for both impingement and entrainment as well as combined totals. These data raise the following issues that need to be considered:

- a. Rather than billions of eggs and hundreds of millions of larvae, the annual loss is about 790,000 fish, of which 99% are forage species that have no commercial or recreational value themselves but do serve as forage for such species.

b. Region 1's concern over entrainment of flounder is based on the loss of 2,700 equivalent adult fish/year. Moreover, the impingement and entrainment data do not reflect Canal Station's recent operations, which have had lower flows and therefore lesser environmental impacts, than when Alden did its analysis in 2003.

- 21. Lower Impact from Reduced Capacity Utilization.** The Response to Comments observes that Mirant Canal has significantly reduced capacity utilization and that this lower capacity is expected to continue. It adds that further curtailment may be possible once additional transmission lines are in place. The Region's quick analysis does not further consider, however, that reduced capacity utilization means lower flow and less entrainment and impingement.
- 22. Entrainment Survival.** The Phase II rule assumed 100% mortality for entrained organisms. In reality this is not the case. For a facility like the Canal Station, the transit time through the cooling system is fairly short, and entrainment survival is likely to be significant. With future Canal Station operation projected often to be a low electrical and thermal load, it is anticipated that entrained organisms will experience only a minor change in temperature during passage through the condenser. Now that the Phase II rule is suspended, there is no reason entrainment survival should not be considered under BPJ. Yet the permit appears to be based on the assumption of 100% entrainment mortality.
- 23. Additional Biological Information Needed.** In the Response to Comments IX.B.2.4, Region 1 says it needs additional biological information, and the final permit requires biological monitoring. The lack of information should be a basis to

await a final BTA decision. Region 1 has not explained how the additional information would be used in light of the closed-cycle cooling requirement.

However, the amount of impingement and entrainment data required by the permit suggests a significant level of uncertainty about the adverse environmental impact.

**iv. Issues raised by the Region's BPJ analysis**

Fourth, Region 1's BPJ analysis of BAT, in which it applied that BAT statutory factors, itself raises issues that deserved comment. Had the Region's BPJ analysis been made public during the comment period, Mirant Canal would have commented on at least the following issues:

- 24. Economic Practicability.** Region 1 states that "In addition, the record shows that a conversion to closed-cycle cooling would achieve a 70-98 percent reduction in intake flow (and entrainment and impingement), and would be economically practicable." But this statement by Region 1 speaks only to the numeric losses and provides no basis for the statement that retrofitting would be "economically practicable."
- 25. Region 1 Evaluation Based on Required Considerations.** Response to Comments IX-30 states "[i]n addition, CWA §§ 301(b)(2)(A) and 304(b)(2)(B) and EPA regulations at 40 C.F.R. §§ 125.3(c)(2) and 125.3(d)(3) dictate that in setting BPJ-based BAT effluent limits certain additional factors be considered. These factors are: (1) the age of the equipment and facilities involved, (2) the process employed, (3) the engineering aspects of applying various control techniques, (4) process changes, (5) cost, and (6) non-water quality environmental impacts (including energy issues)." But the attention Region 1 gives to those factors is inadequate, for at least the following reasons:

- a. Age of Equipment and Facilities Involved.** Region 1's consideration is limited to pointing out that the Canal Station is an old station, that closed-cycle cooling was one of the technologies considered and determined to be feasible (though Region 1 failed to note the limited nature of the analysis, as discussed above), and that because the Station is old it needs to be upgraded and should retrofit with closed-cycle cooling as part of that upgrade. This analysis is inadequate for a BPJ determination. For any facility upgrade, including major equipment such as condensers, generators, turbines, and boilers, the decision to upgrade involves analyzing the remaining life of the Station, current economic viability, and capacity utilization. This is critical to determining the ability of the Station to recover the upgrade costs. A retrofit of closed-cycle cooling, in addition to high capital and O&M costs, would make the Station less economical than it currently is (because of generation loss due to energy penalties) and do nothing to increase remaining life. Region 1 is correct in that a retrofit must be considered in light of the remaining life of the Station and future viability. But Region 1's analysis does not do this.
- b. Process Employed.** Region 1 states that it "considered technological approaches that could reduce these adverse environmental impacts without interfering with the generation of electricity using the steam-electric process and the burning of fossil fuels." Response to Comments IX-32. It then provides a brief statement of the technologies it considered. But it fails to provide any analysis regarding the impacts to the various systems.

- c. **Engineering aspects of applying various control techniques.** The Region's analysis does not mention closed-cycle cooling in the analysis of "engineering aspects." It focuses solely on engineering aspects of *other* alternatives considered.
- d. **Process Changes.** Region 1 provides a short paragraph stating that closed-cycle cooling would not affect Station operations except for the energy penalty and elimination of once-through cooling. But the Region does not consider that a new internal waste stream (cooling water blowdown) will be generated. Though unlikely, it is possible that cooling tower blowdown might have to be treated before being discharged. Region 1 also mentions construction impacts but states these should not be significant and that if a six-month outage is needed, it can be taken outside the peak demand period. Again the analysis is inadequate. It fails to consider impacts to transmission load management during the period of the outage for retrofitting if it occurs before the upgrade of the transmission system that the Region foresees.
- e. **Cost.** Region 1's analysis of cost impacts is inadequate. It incorrectly suggests that it may have overestimated the cost of cooling towers, when in fact the cost may have been significantly underestimated. Also, Region 1 determines that the retrofit is economically viable based on a corporate-level analysis rather than looking at Mirant Canal as an independent business unit.
- f. **Non-water quality environmental impacts (including energy).** In its analysis of energy impacts, Region 1 confined the analysis to the energy penalty and lost energy during a retrofit outage. As discussed above, Region 1's analysis of the

energy penalty is flawed by not considering seasonal energy impacts, which are expected to be higher during the summer period of peak demand. Region 1's evaluation of the impact during a retrofit outage also is flawed, because it does not consider impacts to transmission load stability before new transmission lines are placed in service. Also, Region 1 fails to consider impacts to energy production if the facility is retired because it cannot bear the cost of retrofitting; these impacts are not analyzed in Region 1's analysis at all, other than to say that the Canal Station has the option of ceasing operations.

**26. Region 1 Incorrectly Asserts that Feasibility Equates to Practical/Available.**

Response to Comments IX-27 states "Mirant/Alden and EPA both concluded that closed-cycle cooling was a practicable (or 'available') technology for Canal Station and would reduce adverse environmental impacts from CWISs to the greatest degree from among the alternatives assessed" (footnote omitted). Footnote 20 explains that "EPA uses the term 'practicable' here essentially as a synonym for 'feasible.'" But these terms are not the same, especially under Mirant Canal's current operations. The Mirant Canal analysis was limited to *engineering* feasibility, and only at a conceptual level at that. Mirant Canal's analysis did not consider *financial* feasibility, permitting constraints, or the current level of Station operation.

**27. Curtailing Operations.** Region 1 suggests (Response to Comments IX-26 n.18) the Canal Station could comply by curtailing operations. As Mirant Canal's current operations have already been substantially reduced, Region 1 appears to say that the Canal Station can shut down. However, no analysis is provided for this outcome.

Yet the Response to Comments IX-33 states that it is necessary to consider such factors in the BTA determination.

**v. Issues about the economic feasibility of retrofitting closed cycle cooling**

Fifth, if Mirant Canal had known Region I was proposing closed-cycle cooling, it would have addressed in detail whether the cost of retrofitting closed-cycle cooling can be supported by the Canal Station economically. At a minimum Mirant Canal would have addressed the following economic issues:

**28. Economic viability of the Station.** The Canal Station cannot bear the costs of a cooling tower retrofit and may have to shut down if retrofit is required:

- a. Mirant Canal operates in the highly competitive New England wholesale market (Patton and LeeVanSchaick 2008).<sup>2</sup> This regional market operates to ensure that the lowest-cost suppliers of electricity are used to meet short-term generation demand. Thus, the most efficient stations are able to offer better prices and provide more generation.
- b. Compared to its competitors in the New England market, the Canal Station operates less efficiently (Patton and LeeVanSchaick 2008; FERC 2008),<sup>3</sup> as evidenced by a capacity factor of 23 percent in 2007 (Mirant Corporation 2007 Annual Report).<sup>4</sup> This relative inefficiency is a recent phenomenon, associated

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<sup>2</sup> Patton, David B. and Pallas LeeVanSchaick. 2008. *2007 Assessment of the Electricity Markets in New England*, available at [http://www.iso-ne.com/pubs/spcl\\_rpts/2007/isone\\_2007\\_immu\\_rpt\\_fin\\_6-30-08.pdf](http://www.iso-ne.com/pubs/spcl_rpts/2007/isone_2007_immu_rpt_fin_6-30-08.pdf) (retrieved on August 12, 2008).

<sup>3</sup> Federal Energy Regulatory Commission. 2008. "Order on Complaint." 12 FERC 61,061, Docket No. EL08-48-000, available at [www.ferc.gov/whats-new/comm-meet/2008/071708/E-30.pdf](http://www.ferc.gov/whats-new/comm-meet/2008/071708/E-30.pdf) (retrieved on August 12, 2008).

<sup>4</sup> Mirant Corporation. 2007. *2007 Annual Report*, available at [http://mirant.com/investor\\_relations/pdfs/2007AnnualRptNoticeof2008AnnualMtgProxyStmnt.pdf](http://mirant.com/investor_relations/pdfs/2007AnnualRptNoticeof2008AnnualMtgProxyStmnt.pdf) (retrieved on August 12, 2008).



with higher fuel prices. Before 2006, the Canal Station competed effectively in the market (Patton and LeeVanSchaick 2008). This relative inefficiency means that the plant currently has only a small role in the day-ahead wholesale market.

- c. Region 1's consideration of affordability seems to have focused at the level of Mirant Corporation, the ultimate parent of Mirant Canal, rather than at the individual plant level. The affordability of plant-specific regulatory requirements should reflect the individual plant's ability to bear the cost, not the corporate parent's ability. For example, in its guidance document for evaluating water quality variances associated with other sections of the CWA, EPA explicitly notes that the financial impacts analysis of the cost of compliance is to be conducted at the plant level (EPA 1995).<sup>5</sup> Because EPA considers financial impacts at the plant level for other aspects of CWA regulations, it should consider the Canal Station's specific financial situation when evaluating affordability for Section 316(b) of the CWA.
- d. Region 1's implicit assumption that the corporate profitability measures are distributed evenly across Mirant Corporation's generation assets is not correct. A retrofit that costs as much as (or more than) \$100 million is well beyond the Canal Station's ability to pay based on the economics of its operation. The additional cost of the cooling tower retrofit at Canal would impose a financial burden that would render the Canal Station unprofitable.
- c. Planned transmission upgrades will also impact the economic viability of the Canal Station. In April 2008, the Massachusetts Department of Public Utilities

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<sup>5</sup> U.S. Environmental Protection Agency. 1995. *Interim Economic Guidance for Water Quality Standards Workbook*, available at <http://www.epa.gov/waterscience/standards/econworkbook/> (retrieved on May 19, 2008).

("MDPU") approved a request from the Massachusetts gas and electric utility NSTAR for the construction and operation of new transmission equipment in southeastern Massachusetts (MDPU 2008).<sup>6</sup> As a result of the upgrade, the level of operation of the Canal Station may decline further due to less need for the plant to operate solely to support the transmission system. Several sources indicate that, once operational, the new transmission capacity will reduce (but not completely eliminate) the need for a supplemental commitment for the Canal Station (Sullivan 2007;<sup>7</sup> MDPU 2008; Patton and LeeVanSchaick 2008). For example, Independent System Operator-New England ("ISO-NE") estimates that based on current information about generation and load, the Canal Station will operate approximately 50 days per year once the approved upgrades are complete (Kowalski 2008).<sup>8</sup> Reduced generation brings reduced earnings, making the Canal Station less able to afford the cost of a cooling tower retrofit.

- f. Given the current inefficiency of the Canal Station, the planned transmission upgrade, and the relative cost of a cooling tower retrofit, the Canal Station may shut down if a retrofit is required. EPRI's California model<sup>9</sup> indicates that older plants, with low capacity factors, are not able to afford the cost of a cooling tower

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<sup>6</sup> Massachusetts Department of Public Utilities. 2008. "Department of Public Utilities Approves New Transmission Lines for Carver, Middleborough, Rochester and Wareham," available at <http://www.mass.gov/Eoca/docs/dte/pressrelease/4208dpuantl.pdf> (retrieved on August 12, 2008).

<sup>7</sup> Sullivan, Gregory. 2007. "Exhibit GS-2 Need Analysis for Carver Substation/Line 134 Project" of "Supplemental Direct Testimony of Gregory Sullivan on Behalf of NSTAR Electric Company." Commonwealth of Massachusetts Department of Public Utilities, Petition of NSTAR Electric Company, D.P.U. 07-60 and D.P.U. 07-61, available at <http://www.mass.gov/Eoca/docs/dte/siting/07-60/121807nstspt.pdf> (retrieved on August 12, 2008).

<sup>8</sup> Kowalski, Richard V. 2008. "Lower Southeastern Massachusetts (SEMA) Short-Term Upgrades." Holyoke, Massachusetts: ISO New England Inc.

<sup>9</sup> Electric Power Research Institute. 2008a. *Evaluating the Economic Impacts of a Closed-Cycle-Cooling Retrofit Requirement: Interim Report for California Facilities*. Palo Alto, CA: Electric Power Research Institute.

retrofit and are most likely to shut down. All of these factors combined mean that it may not be economically viable to keep the Canal Station running.

- 29. Reliability of electric supply.** The shutdown of the Canal Station would cause serious reliability impacts, disrupting the reliability of electric supply to the public:
- a. One important aspect of energy production relates to the reliability of the bulk power system. The North American Electric Reliability Corporation (“NERC”) has the legal authority to enforce reliability standards. When New England’s wholesale market does not satisfy NERC’s reliability requirements, ISO-NE takes additional steps to ensure that the electrical system is reliable, which include supplemental commitments to keep uneconomic units in service, ready to provide electricity should the need arise. In exchange for agreeing to keep the units ready for generation, the owners of the units receive additional payments (beyond the market-clearing prices). The costs associated with these payments are called uplift costs, and they are recovered from the market participants (Patton and LeeVanSchaick 2008). Mirant Canal receives such payments in return for being ready to operate the Canal Station to support the transmission grid and provide electricity to Cape Cod at times when the Canal Station is not the most economic facility to dispatch. Thus, in order to meet NERC’s reliability requirements, some uneconomic units will be kept on line, and electric customers pay higher prices.
  - b. Since 2006, the Canal Station has provided supplemental commitment to ISO-NE as a part of the ISO’s contingency plan for reliable service (Patton and LeeVanSchaick 2008; Sullivan 2007). The location of the Canal Station relative to the existing transmission system makes the plant uniquely able to fulfill

ISO-NE's reliability requirements, despite its current inability to operate efficiently (Sullivan 2007; Patrick 2008).<sup>10</sup> A recent Federal Energy Regulatory Commission ("FERC") ruling (2008) affirms the current necessary role of the Canal Station for reliable electric service for Cape Cod, which would experience supply losses due to transmission failures if the existing transmission system was disrupted and Mirant Canal was no longer operating. Should the cost of a cooling tower retrofit requirement result in a closure of the Canal Station for economic reasons, ISO-NE would not be able to fulfill the NERC reliability requirements. Even a temporary shutdown of the Canal Station, during the retrofit period, would currently result in reliability impacts in parts of Massachusetts.

- c. Region 1 says that Mirant Canal's off-peak generation is required for transmission stability but will not be necessary once a new transmission line is in service. However, until that transmission line is completed, Mirant Canal may need to operate the Canal Station to maintain load stability. Should Mirant Canal not be able to bear the cost of retrofitting, there could be impacts on power supply to Cape Cod that Region 1 did not consider.
- d. If despite the retrofit costs NERC required the Canal Station to continue operating for reliability reasons, in exchange for the continued supplemental commitment for reliability, the Canal Station would continue to receive uplift payments, which would need to be increased substantially in order to cover the cost of the cooling tower retrofit.

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<sup>10</sup> Patrick, Matthew. 2008. "Rep. Patrick's Testimony for Cape Wind Hearing," available at <http://www.mattpatrick.org/index.php?name=News&file=article&sid=62> (retrieved on August 12, 2008).

e. The current uplift costs, without additional increases due to the retrofit requirement, are already the subject of controversy. In 2008, several municipal public systems filed a complaint with FERC against ISO-NE for allegedly unjust uplift costs associated with reliability service for Southeast Massachusetts (“SEMA”) (FERC 2008). FERC’s ruling does allow for some refund of the uplift costs, but it also confirms the current necessary role of the Canal Station for reliable electric service to Cape Cod. In light of the current controversy regarding the uplift costs, the added cost burden for a cooling tower retrofit would only exacerbate the reliability situation in SEMA. Moreover, based on the recent FERC ruling, even a temporary shutdown of the Canal Station, during the retrofit period, would result in reliability impacts in SEMA.

**30. Effects on the local community.** Whether the Canal Station closes because it cannot afford the cooling tower retrofit or is required by NERC to continue to operate and thus incurs the costs of the retrofit, Region 1’s BTA determination will negatively affect the local community:

a. A plant closure would hurt the local economy with job losses, reduced local spending, and reduced tax revenues. The plant provides tax revenues to the local economy, which would be lost (or would have to be made up for by other local taxpayers) should the plant close. Nearly 100 people work at the Canal Station (Mirant 2008).<sup>11</sup> With plant closure, many would lose their jobs. Kotval and

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<sup>11</sup> Mirant Corporation. 2008. “Canal Generating Plant,” available at [http://www.mirant.com/our\\_business/where\\_we\\_work/canal.htm](http://www.mirant.com/our_business/where_we_work/canal.htm) (retrieved on August 12, 2008).

Mullin (1997)<sup>12</sup> conducted an economic impact study of the 1992 closure of the Yankee Plant in Rowe, Massachusetts. The authors determined that for every 1.8 jobs lost at the plant, another job was lost in the local economy. In addition, Kotval and Mullin documented the decrease in the town's property tax base and the local businesses. The closure of the Canal Station would likely have similar effects on the community of Sandwich, Massachusetts, and Cape Cod as a region.

- b. On the other hand, should the Canal Station be required by NERC to remain in operation for reliability reasons, the additional costs associated with the retrofit would be passed on to Mirant Canal's customers and ultimately to retail purchasers of electricity. Residents of southeastern Massachusetts already pay \$5 more per MWh compared to other areas of Massachusetts (Patton and LeeVanSchaick 2008). These higher costs reflect payments made to Mirant Canal due to the role that the Canal Station has in the ISO-NE reliability program and would only increase as a result of the retrofit requirement.
- c. In addition to higher electricity costs, the aesthetic harm and the potential noise created by the presence of cooling towers could result in decreased property values in the local community. Region 1 draws a comparison to the Brayton Point Plant in Massachusetts, where the planned cooling towers will be approximately the same height as the tallest existing smokestack. However, the proposed towers at Brayton Point have already raised concerns about the local property values (Welker 2008, *supra*), despite the existing plant site. As with the cost of cooling towers, discussed above, the effect on property values can be

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<sup>12</sup> Kotval, Zenia, and John Robert Mullin. 1997. "The Closing of the Yankee Rowe Nuclear Plant." *Journal of the American Planning Association* 63(4):454-468.

better assessed if the type of towers and their exact location on the property are known.

- d. In addition to the visual impacts, the noise from the cooling towers may also lower nearby residential property values. Region 1 has concluded that the mechanical draft cooling towers installed at the Canal Station would raise noise levels outside the plant property by 1.2 to 3.1 dBA (Response to Comments IX-44). EPRI<sup>13</sup> conducted an assessment of the impact on nearby residential property values for several cooling tower sites. For the additional dBAs identified as relevant for the Canal Station by Region 1, EPRI concluded that housing prices would be negatively affected.

**vi. Whether costs are wholly disproportionate to benefits**

Sixth, Region 1 should have examined in detail, and Mirant Canal would have commented on, the cost of retrofitting cooling towers in the context of what they would accomplish. Even under the Second Circuit's analysis in *Riverkeeper*, costs may be taken into account if the cost of a technology cannot be "reasonably borne" and if two alternatives achieve "essentially the same results." 475 F.3d at 99.

**31. Benefits and uncertainty.** Region 1's analysis inappropriately does not consider the economic benefit of closed-cycle cooling. It merely points out that Mirant Canal did not provide quantitative data. A full analysis would likely show that the costs of a cooling tower retrofit are not justified by the economic benefits:

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<sup>13</sup> Electric Power Research Institute. 2008b. *Draft Beta Test of the Net Environmental and Social Effects Associated with Operation of Closed-Cycle Systems Retrofitted to Power Plants Currently Cooled with Open-Cycle Technology*. Palo Alto, CA: Electric Power Research Institute.

- a. Region 1 notes that the U.S. Supreme Court has agreed to consider the legality of benefit-cost analysis as part of the Phase II § 316(b) rule. The Region also recognizes that if the Supreme Court determines that benefit-cost analysis has an appropriate role in determining compliance with § 316(b), then the Region may reconsider BTA for the Canal Station in the future. The Supreme Court is likely to decide this issue in the first few months of 2009. Given the uncertainty surrounding both the timing and the outcome of the Supreme Court's future ruling on the role of benefit-cost analysis, as well as Region 1's potential reconsideration of BTA for the Canal Station, estimates should be developed of the benefits that accrue to recreational anglers and commercial fishermen as a result of the fish population increase from reduced impingement and entrainment associated with cooling towers before closed-cycle cooling is mandated.
- b. The estimation of benefits would allow the comparison of those benefits to the relative costs of the cooling tower retrofit at the Canal Station. Costs should be compared to benefits in a statistically based framework that explicitly accounts for uncertainty. Mirant Canal believes this would reveal that the net benefits are negative.
- c. This conclusion, combined with the uncertainty of both the timing and outcome of the Supreme Court's decision regarding the role of benefit-cost analysis, means that Region 1's final BTA determination is premature. A retrofit for closed-cycle cooling is an extremely expensive and lengthy undertaking. As the Region points out, it will reconsider BTA for the Canal Station if the Supreme Court decides that benefit-cost analysis is permissible as part of a § 316(b) determination.



Despite this statement, the permit compels Mirant Canal to undertake an expensive and lengthy retrofit process while the Region simultaneously admits that the Supreme Court's future ruling may result in those undertakings being unnecessary. Once funds are spent and construction is complete, Mirant Canal cannot undo the retrofit or recoup its financial loss. Mirant Canal might therefore have to mothball the plant and wait for the Supreme Court decision rather than incur a large expenditure that may turn out to be unnecessary.

**32. Cost-effectiveness.** Cost-effectiveness analysis is likely to show that the costs of cooling towers are "wholly disproportionate" to their environmental benefits:

- a. Region 1's BPJ process attempts to identify "best technology available" that will minimize adverse environmental impacts.
- b. The Second Circuit indicated that cost-effectiveness could be used to assess whether alternative technologies achieve essentially the same level of benefits (minimization of adverse environmental impact) at lower cost.
- c. The First Circuit, in *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 306 (1st Cir. 1979), upheld an EPA intake decision based on costs being "wholly disproportionate" to benefits.
- d. In short, Region 1 should have considered cost-effectiveness when it determined BTA for the Canal Station.

**c. Right to request alternative intake requirements (I.A.13.h & .13.g.iii)**

Part I.A.13.h allows Mirant Canal to ask the Region for alternative intake requirements. Such a request would look almost exactly like the study proposed in the draft permit. Thus the Region in effect converted the originally proposed study for determining BTA to a provision for granting a variance from the Region's post-proposal decision on BTA.

Mirant Canal appeals this on the same ground as the closed-cycle cooling requirement, namely, that it is not a logical outgrowth of the proposal, that Mirant Canal had inadequate opportunity to comment, and that the record is inadequate to support it.

In particular, the following issues about alternatives to cooling towers should have been addressed in comments and considered on an adequate record:

- Region 1's analysis of flow reductions is flawed. Since the Alden report was prepared, lower capacity utilization has changed the analysis of flow reduction alternatives. See Response to Comments IX-33, -35. A reanalysis of reducing flows should have been done based on reduced pump use or use of variable speed pumps.
- Based on newer information, Mirant Canal could have provided an updated analysis of narrow slot wedgewire screens. Installing them in a way that would not impede navigation could have been explored.
- It is not clear whether alternative intake technologies could match the performance of closed-cycle cooling. But if closed-cycle cooling is not feasible because of cost or permitting requirements, a different technology might well be the best "available." This should be analyzed using current information.

CONCLUSION

For the reasons stated above, to be further developed in the supplemental filing by September 30, 2008, Mirant Canal appeals the provisions addressed in this petition.

Respectfully submitted,

**MIRANT CANAL, LLC**

By its attorneys,

 /KAVB

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Dated: September 2, 2008

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing Joint Scheduling Motion and Petition for Review of the Mirant Canal NPDES Permit Issued by EPA Region 1 in the matter of In re: Mirant Canal, LLC, NPDES Permit No. MA0004928, Appeal No. 08-\_\_\_\_\_ were served by United States First Class Mail on the following persons, this 2<sup>nd</sup> day of September, 2008.

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**ATTACHMENT A**  
**PERMIT REQUIREMENTS APPEALED BY MIRANT CANAL**

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