



Defending Our Waters—from the
High Sierra to the Golden Gate

February 29, 2008

Karen Larsen
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Sent via electronic mail to klarsen@waterboards.ca.gov.

Re: Bay-Delta Beneficial Uses Resolution, Actions to Address Impacts at the Contra Costa Power Plant

Dear Ms. Larsen and Staff of the Regional Board:

Thank you for the opportunity to share these comments on actions that the Central Valley Regional Water Quality Control Board may take to implement its recent resolution to protect beneficial uses of the Sacramento-San Joaquin Delta.¹ A comprehensive and coordinated evaluation of the many threats to the Delta is long overdue. As the primary agencies responsible for protecting the beneficial uses of the San Francisco Bay and Delta, the Regional and State Water Boards have an obligation to take action to address the many threats to this already-compromised ecosystem.

While there are many important Bay-Delta protection issues that must be addressed by the Water Boards, we have chosen to focus these comments on the single issue of the Contra Costa Power Plant. Please note that in doing so we do not intend to diminish the importance of the rest of the issues identified in the resolution. It is only that we recognize and support the work of our colleagues on these issues and would like to bring attention to the less visible but more easily resolvable issue of the impacts of the once-through cooling (“OTC”) intakes at the Contra Costa Power Plant (“the Plant”).

The Plant’s use of OTC has had, and continues to have, a significant impact on the Bay-Delta ecosystem. Although limited data exists on the Plant’s current impingement and entrainment, historical data analyzed by the U.S. Environmental Protection Agency shows that, as recently as the early 1990s, the Plant entrained millions of delta smelt every year.² The Plant’s take of smelt and other protected fish species has decreased in recent years as the populations of these organisms have also declined dramatically. No question exists, however, as to whether the Plant is affecting fish population. In light of

¹ Resolution No. R5-2007-0161.

² Entrainment monitoring from 1978 through 1979 and from 1986 through 1992 showed annual entrainment losses of 21 million and 1.5 million delta smelt, respectively. EPA 821-R-02-2002, Case Study Analysis for the Proposed Section 316(b) Phase II Existing Facilities Rule, Part E: San Francisco Bay/Delta Estuary, p. E3-15 (February 28, 2002). These numbers reflect entrainment when all seven units were operating. Currently, only two of the units are still operating, although two other units are operated as synchronous condensers.

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the continued and dramatic decline of key fish species in the Delta, every effort should be made to abate current impacts to those fish populations as soon as possible.

The Regional Board has the authority and the responsibility to reduce the Plant's impacts on the Delta ecosystem by requiring compliance with section 316(b) of the Clean Water Act.³ Section 316(b) requires that all cooling water intake structures reflect the best technology available ("BTA") for minimizing adverse environmental impact.⁴ While the federal regulations implementing this requirement have been rescinded, sufficient guidance exists for this Regional Board to determine what constitutes BTA. Shortly after the Second Circuit Court of Appeals decision in *Riverkeeper, Inc. v. U.S. EPA*⁵ ("*Riverkeeper II*"), EPA directed all permitting authorities to issue permits that "include conditions under section 316(b) of the Clean Water Act developed on a Best Professional Judgment basis."⁶ In using "Best Professional Judgment" ("BPJ") to establish permit conditions, Regional Board decisions must be based not on the average plant, but on the "optimally operating plant, the pilot plant," bearing in mind the aspirational and technology-forcing nature of the Clean Water Act.⁷

The Regional Board should not delay reissuance of the permit until a State Board policy is adopted. We understand that a State Board policy will not likely be adopted until the end of 2008. If the Regional Board waits until a policy is adopted this Plant's permit will not be reissued for at least another year. Because the Plant will need time to comply with section 316(b) it could be many years before any action is taken to actually reduce impingement and entrainment. In the meantime, the Plant will continue to kill countless organisms and have a yet unknown affect on the continuing decline of key Delta species.

The Plant's use of antiquated technology is unquestionably harming the Bay-Delta environment and this Regional Board has authority to require compliance with section 316(b) by establishing permit conditions using its best professional judgment. The Board should not wait on the State Board policy to reissue this permit. Instead, it should issue a permit with conditions and requirements consistent with the *Riverkeeper II* decision. Attached to these comments is a comprehensive analysis of the Court's decision prepared by the Stanford Environmental Law Clinic. With respect to this Plant the decision has the following implications.

- The permit should not exempt the Plant from reducing entrainment based on the suspended rule's 15% capacity utilization rate.

In April of 2006, the owner of the Plant, Mirant Delta LLC ("Mirant"), submitted a Proposal for Information Collection ("PIC") as required by EPA's now-suspended

³ 33 U.S.C. § 1326(b).

⁴ *Id.*

⁵ *Riverkeeper, Inc. v. U.S. EPA*, 475 F.3d 83 (2d Cir. 2007).

⁶ Memorandum from Benjamin Grumbles, Assistant Administrator, U.S. EPA to U.S. EPA Regional Administrators, "Implementation of the Decision in *Riverkeeper, Inc. v. EPA*, Remanding the Cooling Water Intake Structures Phase II Regulation" (March 20, 2007).

⁷ *Riverkeeper, Inc. v. U.S. EPA*, 475 F.3d 83, 100 (2d Cir. 2007).

regulations.⁸ The purpose of the PIC is to describe the technologies that the Plant owner will use to comply with section 316(b) and identify all information that must be gathered as part of a Comprehensive Demonstration Study (“CDS”).⁹

The PIC submitted by Mirant states that entrainment reductions at the Plant are unnecessary because the Plant is currently operating below the 15% capacity utilization rate. This conclusion is incorrect for several reasons. First, as discussed in more detail in the attached analysis, the rule articulating the 15% exemption is no longer in effect and the *Riverkeeper II* decision calls into question the legality of this exemption. Second, the calculation of the Plant’s utilization rate is based on data from 2002 through 2005. Omitted are the rates from 2001 and 2002, which were around 56% and 32% respectively.¹⁰ If the rates from these years are considered, then the Plant would not qualify for an exemption.

Finally, as noted in an attached letter from the National Marine Fisheries Service, the Plant’s Unit 7 is subject to a reliability-must-run contract with the California Independent System Operator, meaning that it must produce energy upon demand regardless of that production’s effect on the Plant’s capacity utilization rate.¹¹ The implication of this contract is that the Plant could exceed a capacity utilization rate of 15% in the future. In light of these facts, the Plant should be required to reduce entrainment impacts consistent with this Board’s determination of BTA.

- The permit must not allow Mirant to conduct a cost-benefit analysis to support site-specific variance.

Mirant has proposed an evaluation of the costs and benefits of meeting the now inapplicable performance standard established by EPA’s Phase II rule.¹² As explained by the Second Circuit in *Riverkeeper II*, however, section 316(b) is “technology-forcing.” Therefore, cost-benefit analyses may not be used to establish BTA either in a federal regulation or in a permit.

- The permit cannot allow Mirant to rely on existing or future restoration measures to comply with any 316(b)-based requirements.

The PIC is replete with statements indicating Mirant’s intent to comply with any section 316(b) requirements through restoration measures.¹³ An unequivocal holding of

⁸ *Clean Water Act Proposal for Information Collection for Mirant’s Contra Costa Power Plant*, prepared for the Central Valley Regional Water Quality Control Board by Tenera Environmental and EPRIA Solutions (April 2006) (hereinafter “Contra Costa Power Plant PIC”).

⁹ 40 C.F.R. § 125.95(b)(i).

¹⁰ CEC-700-2007-016-SF, 2007 Environmental Performance Report of California’s Electrical Generation System, Prepared in Support of the 2007 Integrated Energy Policy Report Proceeding (06-IEP-1), p. 2-14 (January 2008).

¹¹ Letter from Michael E. Aceituno, Sacramento Area Supervisor, National Marine Fisheries Service, to Jon Ericson, Water Resources Control Engineer, Central Valley Regional Water Quality Control Board, regarding comments on Mirant’s Proposal for Information Collection (June 30, 2006).

¹² Contra Costa Power Plant PIC at 3-17.

¹³ “Mirant intends to take credit for two existing restoration programs that have been in place to compensate for the entrainment losses. Mirant provides mitigation dollars to CDFG for losses of entrained striped bass

Riverkeeper I and *Riverkeeper II* is that restoration measures may not be used to offset the impacts of OTC in lieu of requiring installation of technologies that represent BTA.

- The permit cannot credit Mirant with reductions in impingement and entrainment attributable to retirement of old units or the construction of new ones.


In the PIC, Mirant states that it has significantly reduced impingement and entrainment through the non-use of several units and the construction of a new unit that uses closed-cycle cooling.¹⁴ Therefore, it asserts, the Plant has already made significant progress towards complying with section 316(b). This conclusion is illogical. Section 316(b) requires certain power plants to meet technology-based performance standards. Under Mirant's interpretation of the law, a power plant could avoid any improvements to its intakes or units by merely adding non-functional units. In essence, the applicability of section 316(b) becomes dependent on the plant's ratio of units that use OTC versus those that do not, which is a consideration that bears no relationship to technology or the individual units' impacts.

Reissuance of the permit should be a coordinated effort. This Plant is one of two plants owned by Mirant and located near the confluence of the Sacramento and San Joaquin Rivers. The Pittsburg Power Plant, which is in the San Francisco Bay Regional Water Quality Control Board's jurisdiction, also uses OTC and will be up for permit reissuance shortly. We strongly encourage the two Regional Boards to work together with the State Board to determine BTA for these plants and quickly issue permits reflecting BTA without waiting for the statewide policy requiring implementation of 316(b) to come into effect.

* * *

In sum, we recommend that this Regional Board to reissue the Plant's NPDES permit as soon as possible. The permit should include a requirement, based on the Board's best professional judgment as to what constitutes BTA, to reduce impingement and entrainment by a specified deadline.

Sincerely,



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based on an agreed upon loss calculation. Mirant also provides annual compensation based on the amount of water withdrawn by CCPP and the current year delta smelt index." Contra Costa Power Plant PIC at 3-6. See also 3-15 discussing the use of restoration under compliance alternatives two and five.

¹⁴ Contra Costa Power Plant PIC at ES-2.

Attachments:

Stanford Environmental Law Clinic, "Analysis of How the *Riverkeeper II* Decision Affects California Coastal Power Plants."

Memorandum from EPA Assistant Administrator Brian Grumbles to Regional Administrators re implementation of the Riverkeeper II decision (March 20, 2007).

Letter from Michael E. Aceituno, Sacramento Area Supervisor, National Marine Fisheries Service, to Jon Ericson, Water Resources Control Engineer, Central Valley Regional Water Quality Control Board, regarding comments on Mirant's Proposal for Information Collection (June 30, 2006).

Attachment A

How the Riverkeeper II Decision Affects California Coastal Power Plants Stanford Environmental Law Clinic

INTRODUCTION

The Second Circuit's recent decision in *Riverkeeper, Inc. v. U.S. Environmental Protection Agency*, Case Nos. 04-6692-6699, 2007 WL 184658 (2d Cir. Jan. 25, 2006) (*Riverkeeper II*) is a major victory in the ongoing effort to protect the nation's aquatic ecosystems from the destructive effects of once-through cooling systems. *Riverkeeper II* reviewed and substantially rejected EPA's "Phase II Rule" for existing facilities under section 316(b) of the Clean Water Act ("CWA"), which requires 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) (hereinafter "BTA"). The full impact of the *Riverkeeper II* decision on existing power plants along the California coast remains to be determined, but the court's opinion includes three central holdings that are likely to significantly affect future permitting and operation of these facilities.

PRINCIPAL HOLDINGS

I. Use of "Cost-Benefit Analysis" Not Permitted

First, the court held as a matter of statutory construction that EPA may use only cost-effectiveness analysis – and *not* cost-benefit analysis – in determining section 316(b) performance standards. The immediate effect of this holding is a court-ordered remand of the Phase II Rule to EPA for clarification of what role cost considerations played in development of the performance standards for "existing facilities." On remand, EPA may revise performance standards in light of the court's holding, or it may attempt to retain the same performance standards by demonstrating that it did not improperly rely on cost-benefit analysis in developing them.

For purposes of immediate future permitting at individual power plants, the most significant effect of this ruling is that facilities will not be able to use cost-benefit analysis to obtain site-specific variances or exemptions from what would otherwise be BTA. Because the site-specific, cost-benefit exemption that was built into the Phase II Rule was one that virtually every California coastal plant was expected to invoke during future NPDES permit renewals or repowering approvals, the Second Circuit decision is likely to substantially alter the course of upcoming permit decisions.

Building on its earlier decision in *Riverkeeper, Inc. v. U.S. EPA*, 358 F.3d 174 (2d Cir. 2004) (hereinafter *Riverkeeper I*) (invalidating the restoration measures provision of the Phase I Rule for "new facilities"), the Second Circuit in *Riverkeeper II* held that EPA cannot employ

cost-benefit analysis in establishing BTA. The court read section 316(b), like other “technology-forcing” sections of the CWA, as embodying congressional intent to move away from an earlier reliance on cost-benefit analysis, in favor of a regulatory regime where “cost is a lesser, more ancillary consideration in determining what technology the EPA should require for compliance under those sections.” *Riverkeeper II*, Slip op. at 21. The court termed the latter approach “cost-effectiveness” analysis, rather than “cost-benefit” analysis, explaining that: “Cost-benefit analysis . . . compares the costs and benefits of various ends, and chooses the end with the best net benefits. By contrast, cost effectiveness considerations . . . determine which means will be used to reach a specified level of benefit that has already been established.” *Id.*

Under section 316(b), the court held, “Congress has already specified the relationship between costs and benefits in requiring that the technology designated by the EPA be the best available.” *Riverkeeper II*, Slip op. at 25. Given this fact, EPA may permissibly consider costs in only two ways – (1) “to determine what technology can be ‘reasonably borne’ by the industry” and (2) “to engage in cost-effectiveness analysis.” Thus, when setting national BTA performance standards, “EPA must first determine the most effective technology that may reasonably be borne by the industry” and, only once this “benchmark for performance” has been determined, EPA “may then consider other factors, including cost-effectiveness, to choose a less expensive technology that achieves *essentially the same results* as the benchmark.” Slip op. at 23-24 (emphasis added).² EPA cannot, however, decide “that an economically feasible level of reduction of impingement mortality and entrainment is not desirable in light of its cost.” Slip op. at 25.

Because it was unclear from the record before the court whether EPA had engaged in improper cost-benefit analysis in establishing national BTA performance standards, the Second Circuit remanded the Phase II Rule performance standards “for clarification of the basis of the Agency’s action and possibly for a new determination of BTA.” *Riverkeeper II*, Slip op. at 33. In doing so, the court provided some guidance that will be useful in individual permit decisions before new Phase II regulations are promulgated (see “Implications” section below).

II. Use of Percent Ranges to Meet Performance Standards Disapproved

Second, in remanding the Phase II Rule, the Second Circuit expressed serious skepticism about EPA’s use of broad performance ranges (80-95 percent reduction in impingement, 60-90 percent reduction in entrainment) to achieve compliance with BTA. The court noted that while EPA is permitted, for reasons of uncertainty, to set performance standards as ranges, it must nevertheless require that each facility minimize environmental impacts “to the best degree it can.” *Riverkeeper II*, Slip op. at 34. The problem with the Phase II Rule, the court explained, was that it does not require each facility “to choose

² The Second Circuit made it clear that “EPA is by no means *required* to engage in cost-effectiveness analysis.” Slip. Op. at 24, fn.12 (emphasis added).

technologies that produce the greatest reduction possible.” Slip op. at 35. Rather, it “permits even those facilities that could achieve the upper end of a range to be deemed in compliance if they reach only the lower end,” a result that is inconsistent with section 316(b), “particularly when the EPA has acknowledged that many facilities ‘can and have’ achieved reductions at the high end of the range.” Slip op. at 37. As the court explained: “Congress’ use of the superlative ‘best’ in the statute cannot be read to mean that a facility that achieves the lower end of the ranges, but could do better, has complied with the law. The statutory directive requiring facilities to adopt the *best* technology cannot be construed to permit a facility to take measures that produce second-best results.” Slip op. at 37-38 (emphasis in original).

Although the court did not specify what ranges would be acceptable, it did provide guidance that should inform individual permit decisions in the interim before new rules are promulgated. The court noted that if EPA elects to retain ranges in the revised Phase II Rule, the “upper end” of the range “should not be set at a level that many facilities ‘have achieved’ with installation of one or more technologies determined to be BTA but . . . at the best possible level of impingement and entrainment reduction the EPA determines these technologies can achieve.” *Riverkeeper II*, Slip op. at 38, fn.21. It went on to conclude that:

If, at a particular Phase II facility, the adoption of BTA technologies can achieve a 95% reduction in entrainment and impingement, it is unclear why, under our jurisprudence and the clear dictates of the CWA, the EPA should establish a performance standard that has placed the ceiling at the 90% threshold which “many” Phase II facilities “can and have” achieved with the same technology. . . . This would not require every Phase II facility to meet the upper end of the ranges, but only that each Phase II facility achieves the highest reduction it can with the installation of technologies determined by the EPA to be BTA.

Id. This strong language clearly supports the argument that, where a technology is feasible for a particular facility, the reductions achieved by that technology are BTA. In other words, if a technology (*e.g.* closed wet recirculation) is feasible, and that technology results in a 96 percent reduction in impacts, the facility cannot argue that it only needs to achieve 60 percent or 75 percent reductions.

III. Use of Restoration Measures Not Permitted

Third, the court held, again as a matter of statutory interpretation, that restoration measures may not be used as a substitute for technology standards under section 316(b). It based its analysis on its prior holding in *Riverkeeper I* that the restoration provision in the Phase I Rule “contradicts Congress’s clearly expressed intent” because it “was not based on a permissible construction of the statute.” *Riverkeeper II*, Slip op. at 39. The Second Circuit reiterated its prior holding that “however beneficial to the environment, [restoration measures] have nothing to do with the location, design, the construction, or the capacity of cooling water intake structures, because they are unrelated to the structures themselves. Restoration measures *correct* for the adverse environmental impacts of impingement and entrainment . . .

but they do not *minimize* those impacts in the first place.” Slip op. at 39-40 (emphasis in original).

The immediate effect of this holding is that coastal power plants will not be able to employ restoration measures to offset the continued use of once-through cooling systems. That is, the question of whether a once-through cooling system constitutes BTA for a particular plant cannot be tied to any agreement by the plant to provide non-technology mitigation. Again, this ruling is likely to change the course of future coastal plant permitting. Based on the “habitat equivalency method” first employed at the Moss Landing plant and subsequently refined at Morro Bay and elsewhere, it seemed that California’s Regional Water Boards had been poised to allow, if not encourage, the use of restoration offsets as a way to meet section 316(b) BTA requirements. *Riverkeeper II* now prevents them from doing so.

IMPLICATIONS FOR UPCOMING PERMIT RENEWALS

Because it is possible that new regulations will not be finalized for years, Regional Water Boards should follow the court’s guidance in exercising their “best professional judgment”³ for NPDES permit renewals or new NPDES permits for repowering at California coastal facilities⁴ and the State Water Board should likewise utilize the court’s guidance in adopting new statewide policy. The following points, drawn from the holding in *Riverkeeper II*, may be relevant to various upcoming permit decisions:

- **Site-Specific Cost-Benefit Analysis Is Not Permitted Under Any Circumstances.** Many coastal facilities in California have argued that alternative cooling systems are not feasible or reasonable based on cost-benefit analysis. In particular, they contend that the environmental benefits of retrofitting existing facilities or installing alternative systems for repowered facilities are insignificantly small compared to the costs of

³ In the absence of valid EPA implementing regulations as a result of the remand, permit-writers must fall back on their “best professional judgment” in issuing NPDES permits that comply with section 316(b). Even if non-challenged portions of the rule remain in place, the performance standards have now been invalidated by the court, and Regional Water Boards will have to exercise best professional judgment in determining BTA for upcoming individual permits. The exercise of that judgment must be based on the plain language of section 316(b), as informed by the Second Circuit’s interpretation of that language in *Riverkeeper I* and *Riverkeeper II*.

⁴ Last time the section 316(b) implementing regulations were struck down for procedural defects and remanded in 1977, it took EPA nearly three decades (and the prompting of another lawsuit) to reissue them. Based on past history, therefore, state permitting agencies may be continuing to apply the best professional judgment standard for some time to come. That will almost certainly be true for the next round of NPDES permitting for several of California’s coastal plants over the next one to two years.

construction/operation and, therefore, are not justified. *Riverkeeper I* and *Riverkeeper II* now make it unmistakably clear that this type of analysis is not permitted, and that Regional Water Boards can no longer engage in the type of “reasonableness” calculations underlying permit decisions at facilities like Moss Landing.⁵

- **Permits Should Move Forward Based on Statute and Riverkeeper II Direction, Rather Than Wait For Current Comprehensive Demonstration Studies To Be Completed.**

Most, if not all, new and draft permits for California coastal facilities anticipated conducting cost-benefit analyses following completion of comprehensive demonstration studies, as set out in the now largely-invalidated Phase II Rule. A primary purpose of these comprehensive demonstration studies (CDS) was to defer immediate compliance with BTA in order to conduct a cost evaluation study, a benefits valuation study, and a site-specific technology plan that would enable individual facilities to satisfy the now-impermissible cost-benefit exemption. Regional Water Boards generally have been allowing facilities a phase-in period (until January 2008) to complete these studies and, for this reason, are not requiring immediate compliance with BTA standards in the permits presently pending before them. With cost-benefit analysis now deemed impermissible and the associated benefit valuation studies in the CDS’s now largely moot, there appears to be no reason for Regional Water Boards to defer analysis of BTA and compliance with section 316(b) pending completion of such studies.

- **Restoration Measures May Not Be Utilized To Offset/Mitigate OTC Impacts.**

Another unequivocal holding of *Riverkeeper I* and *Riverkeeper II* is that Regional Water Boards may not employ restoration measures to offset the impacts of once-through cooling in lieu of requiring an alternative cooling technology that is BTA. For example, over the last several years, the Regional Water Boards have developed and refined an approach to restoration known as the “habitat equivalency method.” Under this approach, the Board calculates the loss of biomass due to once-through cooling, multiplies that loss by the size of the area (*e.g.*, estuary) affected, and thereby derives the theoretical number of acres that need to be restored to in order to offset the impacts of the cooling system. It then assigns a dollars-per-acre cost for restoration and multiplies that value by the number of lost acres to arrive at a total monetary contribution that the facility must make to mitigate biological impacts. Such a methodology appears to be entirely inconsistent with, and prohibited under, the *Riverkeeper* decisions.

- **BTA Determinations Must Be Based On The Best Technology That An Individual Plant Can Achieve.** As the Second Circuit noted, EPA itself has

⁵ In a challenge to that very issue, the Monterey County Superior Court wrongly affirmed the Regional Water Board’s use of a cost-benefit approach at Moss Landing. That case is presently pending on appeal before the state appellate court in San Jose.

recognized that impact reductions on the order of 95 percent (as compared to once-through cooling systems) can be and have been achieved at many facilities, suggesting (without actually deciding) that such reduction levels may well constitute BTA. Elsewhere in its decision, the court explained that, in determining what technology costs can be “reasonably borne” by industry, the “benchmark for performance” is “not the average plant, but the optimally operating plant, the pilot plant which acts as a beacon to show what is possible . . . bearing in mind the aspirational and technology-forcing character of the CWA.” *Riverkeeper II*, Slip op. at 23-24. These statements, and the court’s repeated admonition that Congress intended each facility to achieve the “best” impact reduction possible, make it clear that California coastal plants generally should be held to a very high performance standard. Absence some exceptional showing by these plants that they physically cannot achieve the same 90-95 percent entrainment reductions achieved elsewhere, there is no legal justification under the Second Circuit’s statutory interpretations for Regional Water Boards to set a lower standard of compliance in determining BTA.

- **While A Site-Specific “Cost-Cost” Analysis May Be Permissible, An Alternative To BTA Can Only Be Allowed Upon A Demonstration That The Facility’s Costs Are Truly Extraordinary.** The court read section 316(b) to disallow cost-benefit analyses; individual plants arguably may still be allowed under *Riverkeeper II* to utilize some form of “cost-cost” analysis (*i.e.*, comparing the costs for a specific facility to the costs developed by EPA in the determination of BTA) to take an action other than what is otherwise considered BTA.⁶ Once a BTA determination is made for a facility based on the strict limits articulated by the court (*e.g.*, can the facility physically accommodate technology that requires 90-95% reductions?), there appear to be two questions that the Regional Water Boards would have to have answered in any cost-cost analysis. First, the applicant would have to provide cost and revenue data that would support its request for an exemption. This sounds obvious, but in fact the Regional Boards have not requested such information, and the plant owners have routinely claimed that such information is confidential and not a legitimate part of the permitting process. Especially given the remand of EPA’s cost estimates based on a lack of opportunity for public comment, Regional Water Boards should only consider cost-effectiveness analysis requests if the applicant provides the relevant financial data for the facility and makes that data available for public review.

The second issue is what standard the Regional Water Boards should apply in evaluating the plant’s costs as different and unique. The Phase II Rule allowed an

⁶ The Second Circuit did not seem to have a conceptual problem with this so-called “cost-cost” analysis, but remanded the cost estimates for several hundred facilities on the grounds that EPA had not provided adequate public notice and opportunity for comment, and because of the remand on the BTA determination. Slip op. at 48. Thus, it appears that while use of a cost-cost analysis by permitting agencies may be permissible, the permit writers arguably could not rely on EPA’s cost estimates for a particular plant.

exemption from BTA where the permitting agency determines that the costs of compliance “are significantly greater than the costs considered by” EPA in establishing performance standards. Because the court remanded the rule for clarification of the economic analysis used by EPA, it did not reach the legality of this site-specific variance provision. However, it did express its “discomfort” and “substantial concerns” with the “significantly greater than” standard. *Riverkeeper II*, Slip op. at 48, fn.25. Because the “significantly greater than” standard seems unlikely to pass muster with the court in the long run, and because it is so subjective as to be meaningless, the Regional Water Boards should not utilize or rely on it future permit decisions. Rather, the overwhelming thrust of the court’s analysis suggests that cost considerations may come into play in a site-specific context, if at all, only when the facility can show it faces truly unique or extraordinary economic circumstances as compared to other facilities.⁷

ADDITIONAL IMPLICATIONS FOR THE STATE WATER BOARD POLICY DEVELOPMENT PROCESS

In considering a new statewide policy on coastal power plant cooling systems, the State Water Board should consider not only the foregoing implications of the *Riverkeeper* decisions, but also the following additional issues that follow from the Second Circuit’s logic:

- **California Should Not Utilize The 15 Percent Capacity Exemption That Was Included In The Now-Rejected Phase II Rule.** Although *Riverkeeper II* did not address the issue of the 15 percent capacity exemption contained in the Phase II Rule, the decision arguably has implications for that provision. In particular, EPA exempted from the entrainment performance standards any facility with a “capacity utilization” rate of less than 15 percent, on the grounds that the impacts are insignificant and that the costs of compliance are not “economically practicable.” Given the Second Circuit’s decision that EPA may not use economic practicability in setting BTA, EPA’s justification for this exemption is now highly suspect. Some of the older, inefficient California coastal facilities are serving as “peaker” plants and may well attempt to qualify for the 15 percent capacity utilization variance (*e.g.*, Morro Bay). Without the “economic practicability” argument to rely upon, California should not be authorizing such blanket exemptions.⁸

⁷ Such an approach is entirely consistent with the general policy notion that all similarly-situated facilities should compete on a level playing field. The fact that coastal power plants historically have been allowed to utilize public resources (*e.g.*, cold Pacific Ocean water) free of charge while externalizing the true costs of this activity (*e.g.*, destruction of coastal ecosystems) should not lock California into that same economically distorting policy going forward.

⁸ Of course, there is substantial evidence that the blanket assumption of insignificant impact by these low-capacity plants is also erroneous. For example, several of the coastal power plants that would be exempt from the state policy based on a 15% capacity factor are

- **California Should Reject Industry’s Arguments That Once-Through Cooling Does Not Significantly Affect Aquatic Ecosystems Or That A Significant Number of Organisms Survive The Process.** During State Water Board workshops in 2005 and 2006, the power industry repeatedly argued that coastal plants are not having a substantial impact on marine ecosystems and that the state should not assume that all biomass entrained in such facilities is destroyed. The industry made similar arguments in *Riverkeeper II* that were ultimately rejected by the court. Given the court’s affirmation of EPA’s assumptions and judgment with respect to biological impacts, there is no reason for the State Water Board to reassess the same industry arguments in developing state policy.

For instance, industry argued that EPA’s Phase II Rule arbitrarily focused on the number of aquatic organisms entrained rather than on population-level impacts (*e.g.*, arguing that millions of larvae are produced and very few survive to adulthood, and that fishing has a bigger impact). *Riverkeeper II* reiterated the court’s earlier ruling in *Riverkeeper I* that EPA’s judgment on this issue was “eminently reasonable” and the court would not “second-guess” it. *Riverkeeper II*, Slip op. at 68-69. Similarly, the Second Circuit rejected industry’s contention that EPA improperly presumed that all entrained organisms are killed. The court found that “[i]t is thus clear that the EPA acted well within its discretion in presuming zero entrainment survival after the Agency had reviewed a substantial body of complex scientific data, and acknowledging that the evidence is inconclusive, it adopted a conservative approach. *Riverkeeper II*, Slip op. at 72.

- **Nuclear Facilities Can Be Included In Any New State Policy.** Although the *Riverkeeper II* decision discusses nuclear facilities only briefly, it nevertheless confirms that such facilities can be covered by any forthcoming state policy. The industry in *Riverkeeper II* argued that EPA had not properly accounted for alleged disproportionate impacts of the Phase II Rule on nuclear plants. The court rejected this challenge, concluding that the rule had adequately provided for a site-specific compliance alternative for nuclear facilities. That provision requires a demonstration by the facility, based on consultation with the Nuclear Regulatory Commission, that compliance would result in a conflict with a safety requirement. Upon such a

located in southern California. However, in southern California, peak larval abundance coincides directly with peak energy needs in the state – during the summer. The relative abundance of fish larvae and eggs is so great during the summer in southern California that even if plant operations were restricted to the summer months, they would still account for the majority of year-long entrainment impacts. (MBC Applied Environmental and Tena Environmental, *AES Huntington Beach L.L.C. Generating Station Entrainment and Impingement Study Final Report* (April 2005), Section 4.4.3, “Entrainment Results; Ichthyoplankton and Station Data for California Cooperative Oceanic Fisheries Investigations Survey Cruises,” see data at <http://swfsc.nmfs.noaa.gov/FRD/CalCOFI/On-LineDataSystem/documentation.htm#data>.)

demonstration, the permitting agency would then make a site-specific BTA determination that avoids the conflict. The *Riverkeeper II* decision certainly allows California to incorporate the same kind of provision into any statewide policy. Arguably, the state can also include additional safeguards designed to ensure protection of the marine ecosystem in the event that a site-specific alternative is necessary.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 20 2007

MEMORANDUM

OFFICE OF
WATER

SUBJECT: Implementation of the Decision in *Riverkeeper, Inc. v. EPA*, Remanding the Cooling Water Intake Structures Phase II Regulation

FROM: Benjamin Grumbles, Assistant Administrator

A handwritten signature in black ink, appearing to read "Benjamin Grumbles", written over the printed name.

TO: Regional Administrators

The purpose of this memorandum is to provide guidance on the status of the Cooling Water Intake Structures Phase II regulation under section 316(b) of the Clean Water Act ("Phase II rule" or "Rule"). The Phase II rule set national standards for cooling water withdrawals by large, existing power producing facilities ("Phase II facilities"). See 40 C.F.R. Part 125 Subpart J; 69 Fed. Reg. 41576 (July 6, 2004). The Second U.S. Circuit Court of Appeals recently issued its decision in the litigation over the Phase II regulation. See *Riverkeeper, Inc., v. EPA*, No. 04-6692, (2d Cir. Jan. 25, 2007).

The court's decision remanded several provisions of the Rule on various grounds. The provisions remanded include:

- EPA's determination of the Best Technology Available under section 316(b);
- The Rule's performance standard ranges;
- The cost-cost and cost-benefit compliance alternatives;
- The Technology Installation and Operation Plan provision;
- The restoration provisions; and
- The "independent supplier" provision.

With so many provisions of the Phase II rule affected by the decision, the rule should be considered suspended. I anticipate issuing a Federal Register notice formally suspending the Rule in the near future.¹ In the meantime, all permits for Phase II facilities should include conditions under section 316(b) of the Clean Water Act developed on a Best Professional Judgment basis. See 40 C.F.R. § 401.14.

If you have questions regarding the application of section 316(b) at Phase II facilities, please contact either Janet Goodwin with the Office of Science and Technology at 202-566-1060 (goodwin.janet@epa.gov) or Deborah Nagle with the Office of Wastewater Management at 202-564-1185 (nagle.deborah@epa.gov).

¹ In the event that the court's decision is overturned prior to publication of the Federal Register notice, then I will not proceed to effect the suspension; if the court's decision is overturned after publication of the notice, the Agency will take appropriate action in response.



JMR
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

June 30, 2006

In response refer to:
151422SWR1999SA00114:SRB

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Mr. Jon Ericson
Water Resources Control Engineer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, California 95670

Dear Mr. Ericson:

Thank you for the opportunity to comment on the Proposal for Information Collection (PIC) submitted for the Contra Costa Power Plant (CCPP) in Antioch, California. This power plant is owned by Mirant Delta, LLC and is currently regulated under National Pollutant Discharge Elimination System (NPDES) permit number CA0004863. The submittal of a PIC is required by the Clean Water Act (CWA) Section 316(b) Phase II rule (EPA 2004a) as part of an evaluation regarding existing power plants that utilize once through cooling technology in their operations. This rule was finalized by the Environmental Protection Agency (EPA) in 2004. The National Marine Fisheries Service (NMFS) Southwest Region, has several concerns regarding the proposed PIC. These concerns and measures to resolve these concerns are discussed below.

NMFS' primary concern with this PIC is its claim that the entrainment standard found in the Section 316(b) phase II rule does not apply to the CCPP. Based on this claim, Mirant does not believe that they are required to conduct a study to ascertain the impacts of entrainment of aquatic organisms resulting from the CCPP operations or implement measures to avoid, minimize or mitigate these impacts as part of their Comprehensive Demonstration Study (CDS). This claim is incorrect for several reasons.

The first reason regards Mirant's projection that they will operate the remaining units at the facility (Units 6 and 7) at less than the Phase II rule's capacity utilization rate of 15% through 2006 and 2007. Mirant admits that they may need to exceed this rate to meet the demand of the California energy market and that they are under a reliability-must-run (RMR) contract with the California Independent System Operator (ISO). The ISO has the authority to order them to run to meet demands and this could result in exceedance of the 15% capacity utilization rate threshold. Mirant has offered to consider a permit restriction that would keep them below the 15% capacity utilization rate, however, the RMR contract would override this permit condition. Even if a permit condition were upheld, it still would not address the existing impacts to this fragile ecosystem. Mirant should therefore be required to conduct an entrainment study as part of their CDS required by the Phase II rules.



Secondly, the assumption that the closing of CCPP Units 1-5 should count against the baseline cooling water intake flows for the facility may not be correct. Units 1-5 were retired from generation in 1995 by the former owner Pacific Gas and Electric Company (PG&E). Although Units 4-5 no longer generate electricity, they are not fully retired. Their current function is as synchronous condensers. EPA is in the process of preparing guidance to address historic cooling water volume reductions such as these (EPA 2004b), and it is not clear if a time period will be put into place for the baseline reduction (*e.g.*, only actions taken after the year 2000). However, there is some language in the Phase II rule already regarding the calculation baseline. CFR 125.93 states, "Calculation baseline means an estimate of impingement mortality and entrainment that would occur at your site assuming that . . . the baseline practices, procedures and structural configuration are those that your facility would maintain in the absence of any structural or operational controls, including flow or velocity reductions, implemented in whole or in part for the purposes of reducing impingement mortality and entrainment." Pages 3-5 of the PIC states that the Unit 1-5 decision was prompted by the cost of upgrading the units to comply with more stringent air and water quality requirements. However the specific requirements are not presented. In addition, these generating units were over 40 years old in 1995 meaning they were approaching, or had reached, the end of their operational lives. This implies that there was an overriding business decision at hand as well (*i.e.*, an expensive turbine replacement project, with or without the regulatory upgrades, was within the foreseeable future). It is logical given the language in the Phase II rule that power generators show some type of proof that these historic retirement decisions were made to reduce impingement and entrainment impacts. We suggest the Central Valley Regional Water Quality Control Board (Regional Board) require such a showing here.

In any event, 11 years have passed since Units 1-5 were retired and there have been significant negative changes in the environmental baseline (*e.g.*, Endangered Species Act (ESA) listings and the current Pelagic Organism Decline (POD) investigations being undertaken by the State and EPA). The remaining units which utilize the cooling water intake (Units 6 and 7) need to be evaluated to determine their current impacts. The evaluation would also address the statement in the current order's fact sheet that, "The removal of Units 1-3 from service reduces the volume of water diverted from the San Joaquin River, *likely* reducing entrainment and impingement impacts" (emphasis added), by proving or disproving that assumption. The intake for Units 1-5 was a submerged structure approximately 250 feet from the shore while the intake for Units 6 and 7 is a shoreline structure. The impacts between these two structures can be expected to differ because of their location and therefore they are not strictly comparable.

Thirdly, the assumption that the planned use of closed-cycle cooling (*i.e.*, a cooling tower) for the Unit 8 project should count as a baseline reduction is incorrect. Mirant projects a cooling water volume to the Unit 8 project (410 million gallons per day) based upon its planned generating capacity and then counts this volume as reduced in order to achieve their 68.5% entrainment reduction estimate. Without this assumption, the retirements of Units 1-5 only generate a 55.4% reduction in baseline flows (and we have already stated that the use of these reductions are questionable in evaluating the baseline). This percent reduction is below the Phase II requirements of achieving at least a 60-90% reduction in entrainment (EPA 2004a).

There are further questions regarding Mirant's use of Unit 8 to attain the minimum 60% reduction in baseline flows. The Unit 8 project at this point in time is little more than a poured slab of concrete. Construction has been suspended since February 2002 according to documents on the California Energy Commission's (CEC) website (CEC 2004). In fact, it appears that Mirant does not even own the unit anymore and the transfer to PG&E may be imminent if the project still complies with the CEC's process (CEC 2006 - discussed shortly). Therefore Unit 8 is hardly an existing unit in reality.

More to the point, Mirant's position that the building of a new unit that does not directly take flows from a water source is equivalent to retrofitting an old unit to reduce its intake is flawed. By that logic, all a company has to do is build new units such as Unit 8 to meet their required percent reduction standard. However, the actual impact to the source water body would never change. We urge the Regional Board to reject this faulty logic and require Mirant to conduct entrainment studies in support of a complete CDS.

Furthermore, Mirant is assuming that the Unit 8 project will go forward. However, they are in violation of their conditions of certification from the CEC which approved the project in 2001 (CEC 2001). The project was approved under the condition that an aquatic filter barrier would be installed on the Units 6 and 7 intake structure to minimize entrainment and impingement impacts. Mirant has not installed this barrier and has stated that it will not utilize this technology. Therefore the assumption that Unit 8 will even be built as planned and available to try this suspect percent reduction scheme is far from guaranteed. It is more likely that the CEC licensing process will need to be reopened. That would likely result in new requirements from the CEC regarding entrainment and impingement minimization technology.

Implicit to Unit 8 baseline reduction claim is the assumption that the unit would have been approved with a once-through cooling system. There are a number of factors that may have factored against approval. The State Water Resources Control Board (SWRCB) has a policy in place to discourage the use of fresh water for power plant cooling making this approval less likely (SWRCB 1975). The CEC's public process would have solicited input from NMFS as well as the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). The CEC would have heard NMFS's concerns about increasing the intake in this sensitive environment and factored that into their analysis. The CEC attempts to implement existing state water policy in the power plant certification cases it considers including SWRCB resolution 75-58 and other sections of the water code summarized in a staff memo (CEC 2003). The Unit 8 project may find itself subject to this policy as it goes through its compliance proceeding amendments with the CEC further invalidating this claim. It is interesting to note that Mirant is apparently already in the feasibility determination phase, in conjunction with the Delta Diablo Sanitation District, regarding the use of approximately 12 million gallons per day of recycled water for cooling purposes. This project (The Mirant Cooling Recycled Water Project) is listed in the Bay Area Integrated Regional Water Management Plan functional area document for wastewater and water recycling (BAIRWMP 2006).

We would also like to point out that the permitting agency (In California, the Regional Board) has authority to require more stringent standards. As discussed in the final Phase II rule published in the Federal Register on July 9, 2004, 40 CFR 125.90(d) states, "Nothing in this

subpart shall be construed to preclude or deny the right of any State or political subdivision of a State or any interstate agency under section 510 of the CWA to adopt or enforce any requirement with respect to control or abatement of pollution that is not less stringent than those required by Federal law." The Water Board has the ability to lay many of the uncertainties of the current proposal to rest by utilizing its authority to require a complete CDS examination that includes entrainment data collection and analysis and development of all mitigation options for review.

Section 40 CFR 125.94(e) further clarifies that, "The Director may establish more stringent requirements as best technology available for minimizing adverse environmental impact if the Director determines that your compliance with applicable requirements of this section would not meet the requirements of applicable State and Tribal law, or other Federal law."

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Magnuson Act (MSFCMA) established procedures for identifying, conserving and enhancing Essential Fish Habitat (16 USC §303(a) and 16 USC §305(b)) for fish species regulated under a Federal Fisheries Management Plan (FMP). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). You will note that EFH responsibilities align very well with the aquatic life beneficial uses. The area impacted by the CCPP is designated EFH for various life stages of fish species federally managed under the Pacific Groundfish FMP (starry flounder), the Pacific Coast Salmon FMP (Chinook salmon), and the Coastal Pelagics FMP (northern anchovy).

Mirant is attempting to use the Unit 8 assumptions to avoid evaluating the use of other compliance options, such as alternative cooling (*e.g.*, towers for Units 6-7 with or without reclaimed water as their cooling water source) or restoration projects sized to mitigate for entrainment impacts, as a means of meeting the entrainment reduction standards and protecting the aquatic life beneficial uses. The entrainment impacts from the CCPP are potentially significant, both individually and as a cumulative impact related to the POD crisis. When examining the biological data presented in the PIC from the 1978-1979 studies at CCPP, you will notice that the losses to entrainment are an order of magnitude greater than the losses to impingement (*e.g.*, ~39,440,000 striped bass larvae and juveniles entrained v. 43,090 impinged at units 6 and 7, and 95,110,000 fish larvae and juveniles entrained v. 107,621 fish impinged). The entrainment data also reflects impacts to some species of note which are not shown in the impingement table such as starry flounder, Delta smelt, and Pacific herring. You should also notice the entrainment of fish eggs of significant species such as smelts, northern anchovy and striped bass.

Mirant needs to conduct the entrainment study to examine their impacts so that mitigation options may be assessed. The entrainment study would form the basis of this evaluation as the data could be utilized in a habitat production foregone analysis similar to what was conducted as

part of Mirant's Potrero Power Plant Unit 3 NPDES permit reissuance process by Dr. Peter Raimondi of the University of California, Santa Cruz (Raimondi 2005). The method was also used in the Central Coast Water Board's processes for the Moss Landing, Morro Bay and Diablo Canyon power plants. This type of analysis is much more effective at addressing the uncertainties found in impact analyses for once-through cooling intake projects. It is similar in concept to processes utilized in our Damage Assessment, Remediation, and Restoration program (*i.e.*, the service-to-service approach) that acts to restore natural resources injured by oil and hazardous substance releases as well as physical impacts that injure coastal resources (NOAA 1997).

Mirant proposes to use the habitat production foregone method as part of the benefits assessment, but only based upon the impingement study and only for non-harvested species. They will not apply the method for commercially or recreationally harvested species. They instead propose to utilize the adult equivalent loss model for this latter set of species. We disagree with this proposal on several grounds. First of all, the adult equivalent loss model requires life-stage-specific mortality rates from the life stage lost to the adult life stage. Application of this series of estimated mortality rates can compound any errors found in the data resulting in a large margin of error (Raimondi 2005, Strange et. al., 2004). Secondly, if there is data available to make these estimates, it often varies between studies. Dr. Raimondi states in the Potrero write-up that, "We have dismissed these calculations repeatedly in other 316B determinations because of: (1) their unreliability, (2) the inability to understand impacts to non-commercial, or non-targeted or non-sampled species and, (3) the inability to understand indirect impacts (*e.g.*, the use of entrained larvae as food by other species)." Thirdly, given the current POD situation in the Delta, it is not logical to dismiss the importance of any biological component in the system. Impacts to the amphipods and copepods that make up the base of the food chain are often classified as unimportant in these power plant cooling examinations because these species are common and widespread in many systems and generally reproduce at a fast pace. However that is clearly not the situation in the San Joaquin Delta in the area of the CCP.

Regarding Mirant's evaluation of technologies that could be implemented to achieve compliance with the impingement mortality reduction standard, NMFS offered review and analysis input during the Habitat Conservation Planning process and subsequent ESA Section 7 consultation regarding this facility which culminated in the now defunct biological opinion of October 2002. In that process, Mirant proposed to install an aquatic filter barrier at the facility but that did not happen. However, through the process of the consultation they became aware of our engineering requirements for fish screens and/or fish handling and return systems (NMFS 1997). NMFS' criteria are available through our website at <http://swr.nmfs.noaa.gov/hcd/policies.htm> under the Fish Screening Criteria for Anadromous Salmonids title. Please note that screening criteria from the USFWS and CDFG is also available at this site and the requirements differ for areas with Delta smelt (CDFG 2000). The work Mirant will have to do to their screening system to come into compliance with the Phase II requirements may trigger a review by CDFG because they are modifying or reconstructing their facilities. We recommend that you check with NMFS (Southwest Region Engineering Team), USFWS and CDFG directly to ensure that compliant designs are evaluated in this process.

NMFS also has questions regarding evaluations of the cost-cost and cost-benefit tests found in this PIC. As stated previously in this letter, we disagree with Mirant's assertion that this facility is not subject to the entrainment percent reduction standard. If the Board agrees with this position, then Mirant would need to utilize the adjusted Appendix A cost of \$993,106.32 as calculated in the Phase II rule (EPA 2004a). However, we also have questions about this calculation and its application. In the calculations, the EPA modeled technology code used in examining the CCPP was #1 – Addition of fish handling and return system to an existing traveling screen system. We are concerned that this was an error on EPA's part that may have ramifications through the remainder of the calculation. Obviously the current existing screening at the CCPP is not adequate. The current through screen design velocity is 1.5 feet per second (fps) while the requirement in the Phase II rule is 0.5 fps. Our through screen velocity requirement for this area is 0.8 fps (NMFS 1997), but the Delta smelt criteria of 0.2 fps may apply here as mentioned earlier (CDFG 2000). The mesh size existing screen (3/8 inch) is also out of compliance with our criteria (1/4 inch at this location). The existing traveling screen system is operated for a total of 90 minutes for a 24-hour period (15 minutes every 4 hours) and uses a high pressure hose system to clean the screens. We do not expect that this system can be easily modified with a more modern fish handling and return system to come into regulatory compliance and to be protective of the beneficial uses of this fragile ecosystem.

Based upon these factors, it seems that a different modeled technology code should have been utilized in the cost calculations found in Appendix A of the Phase II rule. For example, codes number 3 (Addition of new, larger intake with fine-mesh and fish handling and return system in front of an existing intake system), number 6 (Addition of an aquatic filter barrier – which was proposed by Mirant at one time), or number 7 (Relocation of an existing intake to a submerged offshore location with a passive fine-mesh screen inlet with mesh width of 1.75 mm) all seem more appropriate (as well as others or with adjusted details) to the biological conditions found in the San Joaquin Delta in front of the CCPP.

NMFS does not know if the application of a more appropriate technology code would change the cost-cost and/or cost-benefit calculations found in the Phase II rule. This is a question for EPA as well as how these costs are adjusted over time to account for increases in materials costs (*e.g.*, steel) and labor. We suggest that the Water Board engage EPA in this discussion as Mirant conducts their biological studies.

We would like to make another recommendation to the Regional Board regarding the data generated as a result of the PIC and during the CDS. As was done for the NPDES permit reissuance for Mirant's Potrero Power Plant by Regional Board II, we recommend requiring independent peer review of the findings (*e.g.*, the impingement and entrainment studies and the use of modeling such as the adult equivalent loss and the habitat production foregone methods) and in regards to costs and benefits as this progresses to the CDS. Calculating the costs of the mitigation options (*e.g.*, new screening requirements, other cooling technologies or other operational changes) and evaluating those estimates to power plants is a specialized field. NMFS does not have expertise in this field to offer in your support. However, the NMFS Southwest Region Engineering Team does have expertise in engineering design aspects of fish screening and salvaging systems, and is available to engage in design reviews of any proposed fish screening systems for the CCPP. Also, the Central Valley Fish Facilities Review Team

(CVFFRT), based in Sacramento, is an interagency group of technical specialists with experience in this field. The CVFFRT is recognized by the CalFed Bay-Delta Authority and will also assist in the design review process of any fish protection systems proposed for the CCPP.

In summary, we urge the Regional Board to require that Mirant conduct entrainment studies in addition to the planned impingement studies at the CCPP. We do not believe that the CCPP logically qualifies as exempt from this requirement, not only due to the questionable calculations regarding Unit 8 that were employed, but also due to the fragile nature of the San Joaquin Delta which this power plant utilizes for cooling water supply. Due to the presence of several species listed as threatened or endangered under the ESA, the utilization of this habitat by several additional species of recreational or commercial fishing importance and the overall decline in the aquatic health and productivity of the Delta manifested as the POD, we encourage to Regional Board to utilize their authority reserved by the CWA to require studies and/or actions that go beyond the minimums expressed in the Section 316 (b) Phase II final rule. We recommend the Regional Board require a full CDS that examines not only the impingement and entrainment impacts of the facility, but all potential mitigations both technological (*e.g.*, modern screening system, closed-cycle cooling towers) and restorative (*e.g.*, habitat production foregone examination for entrainment as well as impingement impacts to determine the size of proposed restoration projects). We encourage the Regional Board to require independent peer review of the findings of this work, especially as they relate to cost and benefit analyses. We offer you our assistance in any way regarding this project. Please contact Susan Boring at (916) 930-3612 or Joe Dillon at (707) 575-6093 if you have any questions or need more information.

Sincerely,



Michael E. Aceituno
Sacramento Area Supervisor

Cc: Greg Vaughn, Central Valley Regional Water Quality Control Board,
Sacramento, California
Nancy Yoshikawa, U.S. EPA Region IX, San Francisco, California
Ryan Olah, U.S. Fish and Wildlife Service, Sacramento, California
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