

February 29, 2008

Ms. Karen Larsen  
Senior Environmental Specialist  
Central Valley Regional Water Quality Control Board  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, California 95670-6114



Subject: **Central Valley Water Board Actions to Protect Beneficial Uses of the Sacramento-San Joaquin Delta**

Dear Ms. Larsen:

Mirant Delta appreciates the opportunity to comment on the Central Valley Water Board's ("Regional Board's") Staff Report prepared for the upcoming March 5, 2008 Public Meeting to consider Central Valley Water Board Actions to Protect Beneficial Uses of the Sacramento-San Joaquin Delta. Mirant Delta supports the Regional Board's efforts in the Bay-Delta, as well as those of the San Francisco Water Board and the State Water Board. To assist the Regional Board's process, Mirant Delta would like to correct and clarify the description of the Contra Costa Power Plant (CCPP) and provide an update on related studies.

#### ***SUMMARY COMMENTS***

Specifically, Mirant Delta would like to address the following statements in the Staff Report regarding the action item "Address Potential Impacts of Once-through Cooling at the Contra Costa Power Plant" starting on page 8:

- Under "Rationale," the Staff Report states: "The facility diverts up to 350 million gallons per day of Delta water for cooling purposes and discharges high-temperature wastewater causing a thermal plume in the receiving water. Studies show that the diversion entrains or impinges several important Delta species including delta smelt, threadfin shad, and juvenile striped bass and salmon." Staff Report at pp. 8-9.
- This statement does not accurately describe the current level of CCPP operations and overstates the entrainment, impingement and thermal impacts of CCPP operations on aquatic species. As discussed further below, operations have decreased dramatically in the last five years, and entrainment, impingement and thermal impacts have all correspondingly decreased. For example, the Plant has operated at less than 15 percent capacity during that period (operating at under 5 percent capacity in 2006 and 2007), and they generally only operate in the summer months when the energy demand is critical. Average daily flows in the past 3 years have not exceeded 100 million gallons per day, and the average daily flows in 2006 and 2007 were 43 and 35 million gallons per day, respectively.

- Under “Current Activities Related to Action,” the Staff Report states: “The Contra Costa Power Plant’s current permit is based on outdated aquatic life impact studies. The facility is working with the California Department of Fish and Game and the National Marine Fisheries Service to obtain an updated incidental take permit. That process will require additional monitoring and evaluation of take species and identification of avoidance and mitigation measures necessary to address the level of take.” Staff Report at p. 9.
- Mirant Delta has collected extensive data since the NPDES permit was issued in 2001 and believes its important for the Regional Board to recognize the extent of coordination with the resource agencies and of studies completed or currently underway to provide up-to-date data an aquatic impacts.

With respect to its endangered species, Mirant Delta has an incidental take permit from the California Department of Fish and Game (CDFG) under the California Endangered Species Act (CESA), and recently completed an amendment to its existing permit providing for substantially increased mitigation compensation and increased monitoring. Mirant Delta also has incidental take permits under the federal Endangered Species Act (ESA) from the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), and is engaged in an ongoing consultation process with those agencies as well as the U.S. Army Corps of Engineers. Through these processes, Mirant Delta is working with all the resource agencies to implement a comprehensive aquatic species monitoring plan, developed and coordinated with the Interagency Ecological Program (IEP). This IEP Monitoring Plan is a 2-year plan that was initiated in November 2007.

With respect to thermal discharges, pursuant to the Regional Board’s requirements, Mirant Delta is conducting a thermal effects study to update the 1992 Thermal Effects Study. The 1992 study, which was based on the much higher historical operations levels and capacity factors, found no impact to beneficial uses. Thermal impacts can be expected to have decreased since 1992 commensurate with the decreased operations since that time.

Mirant Delta has also completed all of the numerous studies required under its current NPDES permit, which the Regional Board issued in 2001. These include:

- an Economic Analysis of Thermal Design Alternatives, submitted April 29, 2002;
  - a Salinity Study, submitted October 23, 2003;
  - a Boiler Washwater Management System Effluent Study, submitted June 29, 2004;
  - a Low-Volume Waste Stream Characterization Study, submitted October 23, 2003; and
  - a Receiving Water Monitoring Study, submitted December 11, 2003.
- Under “Input Sought,” the Staff Report asks: “What additional information is needed to determine the impacts from the Contra power Plant’s diversion and discharge?” Staff Report at p. 9.
  - In addition to reducing CCPP flows and corresponding aquatic impacts, Mirant has also engaged in extensive discussions with federal and state agencies to assess and address the impacts of the Delta Plants on the delta smelt and other aquatic species through development of a comprehensive monitoring plan, increased mitigation, and participation in the Bay-Delta Conservation Plan (BDCP) process. Mirant Delta is already in the process of collecting extensive entrainment and impingement through the IEP Monitoring Plan and thermal data through the Regional Board’s required thermal study, more extensively discussed below, to determine the impacts from the CCPP’s operations. These studies have been carefully coordinated with the

resource agencies, and Mirant Delta does not believe that additional studies are necessary to assess the CCPP's impacts on aquatic resources.

As noted above, Mirant Delta has also completed extensive water quality studies as required by its current NPDES permit. In conjunction with the studies currently underway, impacts of CCPP operations are being completely and sufficiently characterized.

Finally, the State Water Board is currently developing a statewide once-through cooling policy. Mirant Delta believes it would be premature for the Regional Board to act in advance of the State Water Board's comprehensive, statewide policy-making effort. Furthermore the CCPP's operations are closely coordinated with its sister plant, the Pittsburg Power Plant, and it is therefore important that the Regional Board's regulation of the CCPP be consistent with the San Francisco Water Board permitting actions.

### ***DETAILED COMMENTS***

In addition to the brief updates above, we are providing additional background information below, and hope it will help better inform the Regional Board staff's consideration of its proposed Bay-Delta actions by providing an up-to-date summary of CCPP operations and Mirant Delta's ongoing efforts to assess and minimize potential operational impacts on aquatic resources.

#### ***Delta Plants' Role in California's Energy Grid***

The CCPP and its sister plant, the Pittsburg Power Plant (PPP) (together, the Delta Plants), which are located in close geographic proximity on the Bay-Delta, are critical to the reliability of California's energy grid. They are required to coordinate their operations and are primarily used only during the electric grid's peak energy demand periods. The Delta Plants are limited-use facilities that are called upon to operate by Pacific Gas & Electric Company (PG&E) and/or the California Independent System Operator (CAISO) when generation at the Delta Plants is critically important to grid reliability.

As newer, more efficient plants have been constructed in the area, the Delta Plants have been called on to operate less and less. Current and foreseeable operations at the Delta Plants are now well below 10 percent annual power generation capacity factors, in the range of 1.7 to 3.8 percent of the past couple of years. In 2006, the capacity factor was 4.0 percent at PPP and 2.4 percent at CCPP. In 2007, the capacity factor was 1.7 percent at PPP and 2.4 percent at CCPP. For context, the capacity utilization threshold in EPA's now-suspended 316(b) Phase II Rule, below which the Phase II Rule entrainment performance standard would not apply, was 15 percent, far above the current capacity utilization rates at either of the Delta Plants. Nevertheless, as noted in the CAISO 2008 Transmission Plan (January 8, 2008) at page 37, the Bay Area in aggregate continues to rely on the CCPP and PPP to maintain load reliability and those plants continue to be critical to maintain reliability.

#### ***CCPP Operational Background***

At full build-out, the CCPP included seven natural gas-fueled generating units with a total generating capacity of 1,271 megawatts (MW). The seven units were built in three phases from 1951 to 1964. All of these units utilize once-through cooling technology. CCPP Units 1 through 5 were retired in 1995, resulting in a 55 percent decrease in cooling water capacity and a proportional decrease in the potential to impact aquatic species. Units 4 and 5 had been operated as synchronous condensers to provide voltage support to the system when required by CAISO, but as of January 2008, this function has been permanently retired.

Mirant Delta installed Variable Speed Drives (VSDs) in the 1980s to reduce impacts to aquatic species as part of a Resource Management Plan (RMP) that the Regional Board has incorporated into the CCPP's last several NPDES permits. VSDs allow the plant's cooling water intake pumps to be operated at reduced speeds depending on generation demands. This significantly reduces both the approach velocities to the intake structure and the quantity of cooling water used. The Regional Board required implementation of the RMP to meet the "best technology available" (BTA) requirement of Clean Water Act section 316(b). The RMP requires VSDs to be operated during the period of May 1-July 15 of each year. It also requires that PPP Unit 7, which utilizes closed-cycle cooling, be preferentially dispatched ahead of all other Delta Plant units during the same May 1-July 15 period.

The remaining operational CCPP Units 6 and 7 have a total generating capacity of approximately 674 net MW. The generation status of CCPP's units is presented on Table 1. In 2004, pursuant to FWS requirements, Mirant Delta upgraded the VSDs to more sophisticated and reliable Variable Frequency Drive (VFD) technology, implemented year-round at the CCPP to further reduce impacts to aquatic species.

**Table 1: CCPP Generation Status**

	Net Capacity (MW)	Status
Unit 1	-	Retired
Unit 2	-	Retired
Unit 3	-	Retired
Unit 4	-	Retired
Unit 5	-	Retired
Unit 6	337	Operational
Unit 7	337	Operational

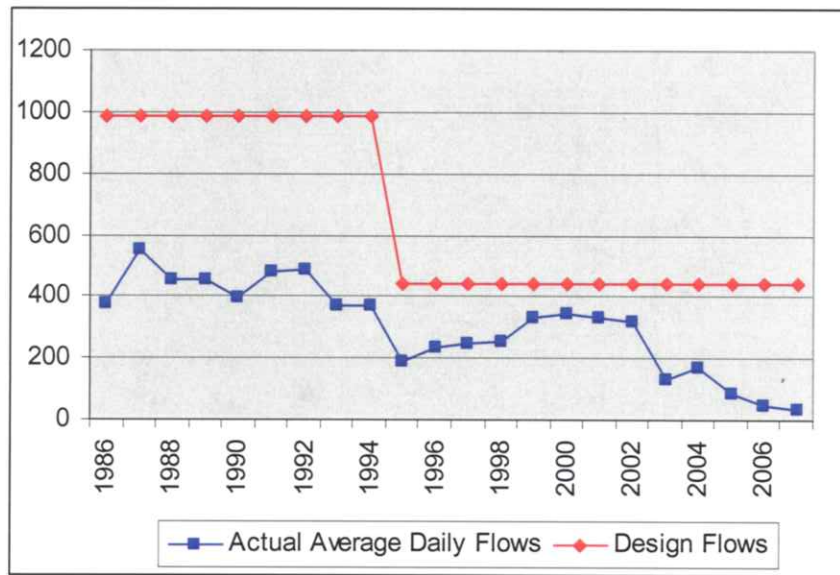
Capacity utilization and intake flows at the CCPP have dramatically decreased in the years since California's energy crisis in 2001. Since 2002, annual and average daily cooling water flows at the CCPP have decreased by 89 percent due to retirement of units, installation and operation of VFDs, and the fact that new plants have come on line, reducing the demand for older units, such as the CCPP. The Electrical Capacity Utilization and Cooling Water Flows for CCPP from 2002-2007 is provided on Table 2.

**Table 2: Electrical Capacity Utilization and Cooling Water Flows for CCPP from 2002-2007**

Year	Capacity Utilization (MWh/(MW Capacity * hours of generation))	Average Daily Cooling Water Flows (MGD)	Combined Annual Cooling Water Flows (MG/yr)	Combined Annual Cooling Water Flows (million AF/yr)
2002	33.1%	321	117,099	0.36
2003	9.2%	128	46,740	0.14
2004	12.9%	167	60,926	0.19
2005	5.6%	82	29,874	0.09
2006	2.4%	43	15,641	0.05
2007	2.4%	35	12,879	0.04

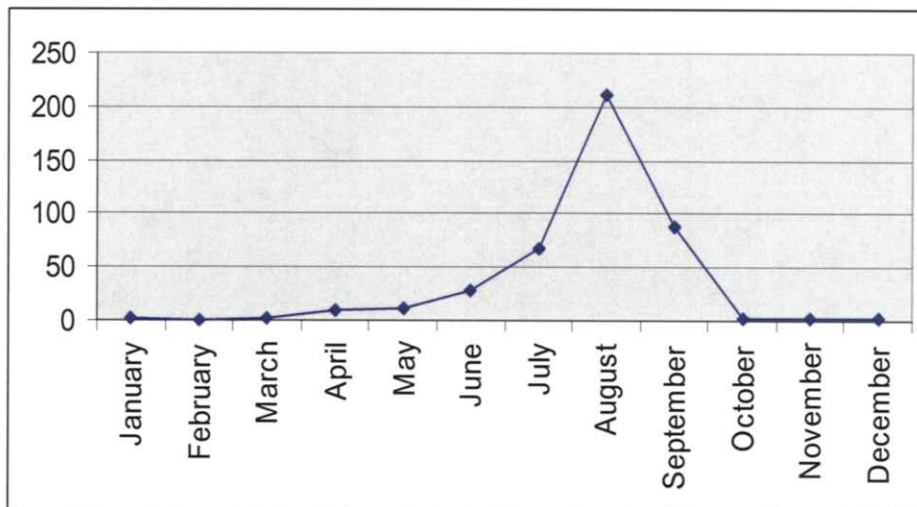
Figure 1 on the next page depicts the long-term downward trend of CCPP's actual average daily cooling water flows from 1986-2007. Average daily flows have always been well below design flows but have been sharply reduced over the last 5 years, from 321 MGD in 2002 to 35 MGD in 2007.

**Figure 1: Average Daily Flows (MGD) of the CCPP from 1986 through 2007 Relative to Design Flows**



CCPP generation has also been increasingly confined to the peak summer and early fall electrical demand periods. As Figure 2 shows, virtually all of the CCPP’s generation and cooling water intake in 2007 occurred in the July-September period. This operational profile is expected to continue.

**Figure 2: CCPP 2007 Average Daily Flows by Month (MGD)**



**Mirant’s Efforts to Assess and Further Reduce Impacts**

In addition to reducing Delta Plant flows and corresponding aquatic impacts, Mirant has also engaged in extensive discussions with federal and state agencies to assess and address the impacts of the Delta Plants on the delta smelt and other aquatic species through participation in the Bay-Delta Conservation Plan (BDCP) process, development of a comprehensive monitoring plan, and agreement to increased mitigation. Mirant Delta is already in the process of collecting extensive entrainment, impingement and thermal data, discussed below, to determine the impacts from the CCPP’s operations. These studies have

been carefully coordinated with the resource agencies, and Mirant Delta does not believe that additional studies are necessary to assess the CCPP's impacts on aquatic resources.

Mirant Delta has also completed all of the numerous studies required under its current NPDES permit. The Regional Board required these studies in order to more completely characterize the CCPP's water quality impacts. These include:

- an Economic Analysis of Thermal Design Alternatives, submitted April 29, 2002;
- a Salinity Study, submitted October 23, 2003;
- a Boiler Washwater Management System Effluent Study, submitted June 9, 2004;
- a Low-Volume Waste Stream Characterization Study, submitted October 23, 2003; and
- a Receiving Water Monitoring Study, submitted December 11, 2003.

Together with the studies and efforts currently underway, described below, the aquatic impacts of the CCPP are being sufficiently characterized, and additional studies should not be required.

Mirant Delta is engaged in the following activities to assess and address its operational impacts on listed species:

#### *Bay-Delta Conservation Plan*

Mirant is a participant in the BDCP process, a multi-party planning process including federal and state wildlife agencies, state and federal water contractors, Mirant, and numerous Delta stakeholders, who are working together to develop long-term conservation measures to protect listed aquatic species in the Delta. Mirant is a Potentially Regulated Entity and a member of the Steering Committee of the BDCP, and is funding its proportional share of the BDCP planning and implementation. The BDCP is intended to provide long-term incidental take coverage for Mirant's operations through a joint federal Habitat Conservation Plan and state Natural Communities Conservation Plan.

#### *Federal & State Endangered Species Act Permit Revision*

Working closely with CDFG, Mirant updated its CESA incidental take coverage in September 2007 and committed to an increase in its aquatic mitigation compensation payments to fund Delta conservation efforts pending the completion of Mirant's IEP Monitoring Plan. Mirant also continues to work with the U.S. Army Corps of Engineers, USFWS and NMFS to revise its federal ESA permits. Both USFWS and NMFS have confirmed that Mirant's current permits and their conservation measures will remain in place pending this revision process.

#### *Interagency Ecological Program Monitoring Program*

Mirant's monitoring plan, developed in cooperation with and approved by the IEP, will provide up-to-date scientific data to inform revised conservation measures as necessary. The IEP Monitoring Plan, which commenced in November 2007, is designed to coincide with the CDFG regular aquatic surveys and will advance the objectives of the California Resources Agency's 2005 Delta Smelt Action Plan and its updated 2007 Pelagic Fish Action Plan (*See* p. 9 of the Pelagic Fish Action Plan), as well as inform the ongoing consultation process with USFWS, NMFS and CDFG. It will also serve to inform the Regional Board in its NPDES permitting process.

#### *Thermal Effects Studies and Thermal Compliance*

Mirant Delta is also conducting a Thermal Effects Study at the Delta Plants to characterize the thermal discharges at the plants and to assess their impacts. This study is intended to inform the Regional Board's NPDES permitting process, as well as inform the Resource Agencies' assessment of the Delta Plants' impacts on aquatic species. The most recent thermal impacts study for the Delta Plants was conducted in 1992 and concluded that the thermal plumes created by the Delta Plants' discharge did not adversely

affect beneficial uses. That study reflected the operation of all fourteen historically operating Delta Plant units, as well as much higher capacity utilization rates. The Delta Plants have since retired nine of those fourteen units, and operations have decreased dramatically. Thermal impacts can be expected to have correspondingly decreased since the 1992 study was conducted, making it unlikely that the Delta Plants' thermal discharge poses a threat to beneficial uses. Moreover, Mirant Delta's current NPDES permits contain thermal discharge terms and conditions based on Clean Water Act section 316(a) and the State Thermal Plan, and Mirant Delta has consistently complied with those terms and conditions.

### *Need for Coordination of Delta Plant Planning*

As the Staff Report correctly notes, the State Water Board is currently developing a statewide once-through cooling policy. Mirant Delta believes it would be premature for the Regional Board to act in advance of the State Water Board's comprehensive, statewide policy-making effort.

Additionally, it is critical that the Regional Board's CCPP permitting activities are closely coordinated with those of the San Francisco Bay Region, as the operations of the PPP are closely linked to the CCPP. The 316(b) requirements in previous NPDES permits for the two plants have been complementary, and in fact have explicitly required coordinated operation of the two plants to preferentially dispatch PPP Unit 7 during the period of May 1 through July 15 of each year (known as the "Delta Dispatch" program). The Delta Plants are also closely coordinated to meet air quality limits. Regulating the two similarly situated and closely coordinated plants inconsistently would be impractical and could have the potential to compromise Mirant Delta's ability to effectively meet the demands of the grid. Given the coordination between the plants to meet, for example, air quality limits, measures taken at one plant could potentially adversely affect operations at the other plant.

The two plants are also in close geographic proximity, and for practical purposes their impacts on aquatic resources have consistently been considered in tandem to avoid duplication of effort by various regulators with jurisdiction over the plants and to take into account the plants' similar impacts. Moreover, conservation measures associated with aquatic species have been consistently coordinated between the two plants for over twenty years. The ongoing ESA/CESA consultation process with CDFG, NMFS and USFWS has consistently addressed the Delta Plants together, and all of Mirant Delta's incidental take permits cover the operations of both plants. The IEP Monitoring Plan was also prepared to assess the impacts of the two plants together.

Consequently, it is critical that any actions the Regional Board takes with respect to the CCPP are consistent with those the San Francisco Water Board takes with respect to the PPP. In the absence of any clear federal or state regulatory guidance on 316(b) compliance, Mirant Delta urges the Regional Board to defer to the State Water Board as it develops a consistent statewide 316(b) policy that would facilitate consistency between the regulation of the two Delta Plants.

We look forward to working with the Regional Board to address Bay-Delta water quality issues. Please feel free to contact me with any questions at (925) 427-3560 or Steve Bauman, Senior Environmental Engineer, at (925) 427-3381.

Sincerely,



**John Chillemi**  
President