Response to Public Comments for Mirant Canal Station

In accordance with the provisions of 40 C.F.R. § 124.17, this document presents the United States Environmental Protection Agency's ("EPA New England" or "EPA") and the Massachusetts Department of Environmental Protection's ("MassDEP" or "DEP") responses to comments received on Draft NPDES Permit (MA0004928), which authorizes discharges from, and cooling water intake to, the Canal Station Power Plant ("Canal Station" or the "Station"). The Canal Station is owned and operated by the Mirant Corporation (also referred to in this document as "Mirant Canal," "Mirant," the "Company," or the "Permittee"). The public comment period on the Draft Permit began on December 22, 2005 and ended on February 4, 2006. This time period included one extension of the comment period.

The following parties commented on the Draft Permit:

Mirant Canal
National Marine Fisheries Service (NOAA)
Massachusetts Division of Marine Fisheries
Massachusetts Coastal Zone Management
Massachusetts Riverways Program

EPA has organized the responses to comments in this document by subject matter. All comments presented in this document have been reproduced verbatim from each comment letter and have not been paraphrased.

After a review of the comments received, EPA and DEP have decided to reissue the permit to Canal Station. As a result of comments on the Draft Permit, the agencies have revised certain permit conditions, improved certain analyses and made certain clarifications. These improvements and changes are detailed in this document and reflected in the Final Permit. A summary of the changes made in the Final Permit is presented below. The analyses underlying these changes are explained in the responses to comments that follow.

This permit is being jointly issued by EPA and MassDEP pursuant to the federal Clean Water Act (CWA) and the Massachusetts Clean Waters Act, respectively. EPA will generally present responses to comments as EPA's; DEP's certification and joint issuance of the permit will establish that the Department agrees with EPA's response.

The most significant changes between the Draft and Final Permits involve revised entrainment [and impingement] reduction requirements under CWA § 316(b). These changes, however, are a logical outgrowth of the conditions in the Draft Permit and do not raise significant new issues warranting that the Region exercise its discretion to reopen the public comment period under 40 C.F.R. § 124.14(b). These changes and the reasons for them are discussed in detail in Chapter IX of this document.

Electronic copies of the Final Permit and these responses to public comments are available at EPA Region 1's web site at epa.gov/regiona01/npdes/mirantcanal/index.html. Copies of the Final Permit also may be obtained by writing or calling EPA's Industrial Permits Branch (CIP), Office of Ecosystem Protection, 1 Congress Street, Suite 1100, Boston, MA 02114-2023; Telephone: (617) 918-1995.

TABLE OF CONTENTS

Changed Permit Conditions

The following changes (shown in italics) have been made to the Final Permit in response to comments:

1. Part I.A.2. – "*once-through"* has been deleted from the outfall 001 description of non-contact condenser cooling water. See Sections III.E and IX.A.1 of this Response to Comments (RTC).
2. Part I.A.2. - footnote 1 has been supplemented with the following: "*This limit only applies to the extent that the Permittee utilizes once-through cooling water*." See Sections III.E of this Response to Comments (RTC) document.
3. Part I.A.2. - measurement frequency of total residual oxidants has been changed from "*1 sample every 30 minutes during chlorination"* to "*1 sample per Unit during each chlorination event*." See Section III.A.3 of this RTC.
4. Part I.A.2. - deleted *Footnote 2: " pH shall not be more than 0.2 units outside of natural range*." See Section III.C.4 of this RTC.
5. Part I.A.2. - measurement frequency of pH has been changed from "*Continuous*" to "*Weekly*" and sample type has been changed from "*Recorder*" to "*Grab*." See Section III.C.1 of this RTC.
6. Part I.A.2. - temperature limit of 107(ºF) has been moved from the "*Maximum Daily*" column to the "*Instantaneous Maximum*" column. See Section III.D.2 of this RTC.
7. Part I.A.2.b. - added: "*If the daily sampling and applicator checks disclose any unresolved abnormality with the applicators or feed rates, all subsequent dosing of chlorine is prohibited until the abnormality is corrected*." See Section III.A.3 of this RTC.
8. Part I.A.2.c. – ambient water temperature monitoring in the Cape Cod Canal is required once per week "*from July 1 through September 30"* See Section III.D.1 of this RTC.
9. Part I.A.2.e. - added: "*During the period beginning on the effective date and lasting through expiration, the permittee shall submit monthly **TRO Monitoring Reports** providing data for all samples collected and analyzed for the previous month*." See Section III.A.3 of this RTC.
10. Added Part I.A.2.f., which specifies effluent monitoring requirements and limitations on cooling tower blowdown, pursuant to 40 C.F.R. 423, if the Permittee installs and operates cooling tower technology to meet the requirements of Part I.A.13.g of the Final Permit. See Sections III.E and IX.A.1 of this RTC.
11. Part I.A.3. - deleted *Footnote 1:* " *pH shall not be more than 0.2 units outside the naturally occurring range*." See Section IV.A.1 and III.C.4 of this RTC.
12. Part I.A.3. - measurement frequency of pH has been changed from "C*ontinuous*" to "W*eekly*" and sample type has been changed from "R*ecorder*" to "*Grab*." See Section IV.A.1 and III.C.1 of this RTC.
13. Part I.A.3.a. - "of" replaces "from" in the following requirement: "Temperature and pH shall be monitored at the Cape Cod Canal end of the outfall 002 discharge flume within two feet *of* the water surface." See Section IV.A.2 of this RTC.
14. Part I.A.3.a. - temperature and pH shall be monitored… "when condenser cooling water is discharging." See Section IV.A.2 of this RTC.
15. Added *Part I.A.3.d.* - "*The outfall 002 discharge flume shall provide sufficient water depth to return impinged organisms to the Cape Cod Canal with minimal stress*." See Section IV.C.1 of this RTC.

16. Added *Part I.A.3.e.* – "*Upon completion of the upgrades to the fish return system as required by Part I.A.13.e. of this permit, the Permittee shall monitor and report average monthly and maximum daily flows for the discharges composed solely of intake screen washwater*." See Section IV.D of this RTC.
17. Part I.A.4. - deleted "*during emergencies only*" from the discharge description. See Section V.A of this RTC.
18. Removed Part I.A.4.a. - "*The permittee shall notify EPA and MA DEP within 24 hours by telephone after initiating discharge from this location. A written confirmation report shall be provided within five business days*." See Section V.A of this RTC.
19. Part.I.A.5. - flow limits for outfall 011 and outfall 012 have been changed to "*Report*". See Sections VI.A.2 and VII.C of this RTC.
20. Part I.A.5. - added "*Total Mercury (mg/L) effluent limitations: Average Monthly - Report; Maximum Daily - Report; Measurement Frequency - Daily; Sample Type - Composite*" and deleted Part I.A.5.*c.* See Section VI.C.1 of this RTC.
21. Part I.A.5.c. - the requirement to submit annual certifications that "*all caustic used has no detectable levels of mercury*" has been replaced with the requirement for the Permittee to "*undertake reasonable best efforts to obtain and to use bulk caustic manufactured using a mercury-free process*." See Section VI.C.1 of this RTC.
22. Deleted Part I.A.5.*d*. – the additional sampling requirements for boiler chemical cleaning. See Section VI.C.3 of this RTC.
23. Added Part I.A.5.d and Part I.A.6.b.: "The total average monthly combined flow from outfall locations 011 and 012 shall not exceed 0.32 MGD and the total maximum daily combined flow from outfall locations 011 and 012 shall not exceed 0.52 MGD." See Sections VI.A.2 and VII.C of this RTC.
24. Part I.A.6. - sampling frequency for Total Suspended Solids and Oil & Grease has been changed from "1X/Week" to "*Twice per Month.*" See Section VII.B of this RTC.
25. Part I.A.7. has been changed as follows: "During the period beginning on the effective date and *lasting through expiration*, the permittee shall submit *three* annual Heat Load Reports providing the following information:" See Section VIII.A of this RTC.
26. Part I.A.7.b. has been changed as follows:

    "Where Q = Heat Load, BTU/Hour

    C_p = Heat Capacity (Specific Heat) of water *with salinity of seawater = 0.94* BTU/pound°F

    m = mass of water (discharged) = flow rate x *density of seawater* = flow rate, gallons per hour (gph) x *8.55* pounds/gallon

    ΔT = discharge - intake temperature, °F ." See Section VIII.A of this RTC.
27. Part I.A.7.d. - "*for each Unit*" and "*Unit Number*" have been deleted from the spreadsheet example. See Section VIII.A of this RTC.
28. Part I.A.7.d. - footnote 2 has been changed to: "Temperature shall be measured *at the end of the discharge flume*." See Section VIII.A of this RTC.
29. Part I.A.7.e. - the annual Heat Load report due date of "*January 31st*" has been changed to "*February 28th*." See Section VIII.A of this RTC.
30. Added Part I.A.7.f. - "*The annual Heat Load Report is not required if a closed-cycle cooling system for both electrical generating Units 1 and 2 is in operation to achieve the standard specified in Part I.A.13.g of this permit.*" See Section VIII.A of this RTC.
31. Part I.A.8.a. and b. requirements of the Draft Permit, to submit a Proposal for Information Collection (PIC) and a Comprehensive Demonstration Study (CDS) respectively have been removed. See Section IX.B.2.5 of this RTC.

32. Part I.A.8.c. of the Draft Permit (now simply Part I.A.8) has been changed by removing the requirement for Cooling Water System Data (subject to Phase II suspension) and changing the date the other information is due to January 7*, 2009.* [the January 7, 2009, deadline is a one year extension from the Draft Permit's deadline of January 7, 2008, due to the timing of the Final Permit's issuance] See Section IX.B.2.5 of this RTC.
33. Part I.A.10.b. has been changed to include "*sea turtles*." See Section IX.C.2 of this RTC.
34. Part I.A.9.d. – the deadline for completing the inspection and removal of sediment build-up on the face of the Unit 2 intake, "*Within six weeks of effective date of this permit*," has been removed. See Section IX.D.1 of this RTC.
35. Part I.A.11.a. has been changed to: "*From the paved walkway*, *t*he permittee shall visually inspect the shoreline areas adjacent to the discharge canal (outfall 001) *to the limits of Mirant Canal's property* for any sign of environmental stress and/or fish mortality at least *once daily*, for the duration of the permit..." See Section IX.C.3.1 and Section IX.C.3.2 of this RTC.
36. Part I.A.11.b. has been changed as follows: "In the event of fish mortalities in the discharge or thermal plume, *the permittee shall make a reasonable attempt to collect a representative sample of the dead fish* from the receiving waters or from the shoreline within four hours after the fish mortalities have been observed *and hold them up to one week for review by the Division of Marine Fisheries Service*, while also complying with all the monitoring and reporting requirements in this permit." See Section IX.C.3.1.
37. Part I.A.11.c.i(1)(b), regarding the collection of scale samples, has been removed. See Section IX.C.5 of this RTC.
38. Part I.A.13.b. has been changed to: "The permittee shall *equip all traveling intake* screens with fish holding buckets …" and the requirement to complete this work within 12 months has been removed. See Section IX.D.3 of this RTC.
39. Part I.A.13.c. has been changed to: "The permittee shall ensure that a low pressure (30 psi) screen spray wash is in operation as part of each screenwash system in a manner such that *most* organisms are not exposed to high pressure screen spray…." and the requirement to complete this work within 12 months has been removed. See Section IX.D.4 of this RTC.
40. Part I.A.13.d. - requirement to relocate chlorine injection points within 12 months has been replaced with: "*During chlorination, each screen shall: (1) be continuously rotated to reduce the amount of time impinged organisms are subjected to high levels of chlorine; and (2) either use an alternative water source that is not chlorinated for screen washing or dechlorinate the screen wash water*." See Section IX.D.7 of this RTC.
41. Part I.A.13.e. - the requirement to complete the reconfiguration of the fish return system within 18 months has been removed. See Sections X.A, XI.A and XII.A of this RTC.
42. Part I.A.13.g. – the BTA-based requirements for entrainment reduction have been changed and Part I.A.13.h has been added as follows:

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

restrictions on chloride discharges). The permittee shall fulfill this BTA requirement by either of the methods specified in paragraph 13.g.i or paragraph 13.g.ii below.

i. The permittee shall utilize a closed-cycle cooling system for electrical generating Units 1 and 2 to achieve the standard specified in paragraph 13.g above; or

ii. The permittee shall utilize another method of achieving the standard specified in paragraph 13.g above. In quantifying the entrainment reduction performance of a technological alternative to closed-cycle cooling, the percentage of entrainment reduction achieved shall be reduced by any increase in impingement mortality that results from use of the alternative method.

iii. If the permittee utilizes a method of entrainment reduction under paragraphs I.A.13.g.i - ii, above, that would achieve the same level of impingement mortality reduction as the steps required by paragraphs I.A.13.a - f, above, then the permittee may seek a permit modification to remove the unnecessary requirements.

h. If the permittee later concludes that the requirements specified above in paragraph 13.g do not ensure that the design, location, construction and capacity of the facility's CWIS will reflect the BTA for minimizing adverse environmental impacts, the permittee may request that EPA modify this permit under 40 C.F.R. § 122.62 to provide alternative BTA limits that will ensure that the requirements of Section 316(b) of the Clean Water Act, 33 U.S.C. § 1326(b), are satisfied in light of consideration of the factors specified in 40 C.F.R. § 125.3(d)(3) . EPA will process any requested permit modification consistent with applicable law, including 40 C.F.R. §§ 122.62 and 124.5. (See also Permit Condition II.A.4 ("Reopener").)"

See Section IX.A of this RTC.

The following changes have been made to the Final Permit as administrative edits and for clarification purposes:

1. The page numbers have been changed throughout the permit, as appropriate.
2. This permit shall become effective "*on the first day of the calendar month following 60 days after signature*" instead of "*60 days from the date of issuance."*
3. This permit and the authorization to discharge expires "at midnight, five (5) years from *the last day of the month preceding* the effective date " instead of "at midnight, five (5) years from the effective date."
4. The Director of the EPA Office of Ecosystem Protection has been changed to "*Stephen S. Perkins*."
5. The acronym for the Massachusetts Department of Environmental Protection, "*MA DEP*" has been changed to "*MassDEP*" through out the permit.
6. Parts I.A.2, 3, 4, 5 and 6 - The sample type for flow has been changed from "Recorder: Pump capacity curve and operational hours" to "Recorder *or* Pump capacity curve and operational hours." See Section VI.B.1 of this RTC.
7. Part I.A.2. – the acronym WET for Whole Effluent Toxicity has been added to the effluent characteristic column because the acronym is used in Part I.A.2.d of the permit.
8. Parts I.A.2 and 3 - The sample type for the temperature rise monitoring requirements of locations 001 and 002 have been changed from "Recorder" to "Calculation."

9. Part I.A.2.c. - "*along with*" replaces "*by January 31st. The information shall be reported in*" in the following requirement: "This information shall be submitted to the EPA and MassDEP annually *along with* the annual Heat Load Report."
10. Part I.A.3.b. - changed "*Part 1.A.13.*" to "*Part I.A.13.e*."
11. Parts I.A.4 and 5: "1X/Day" changed to "*Daily.*"
12. Part I.A.7.a. and Part I.A.7.c - the past year has been clarified as January "*1st"* to December "*31st*"
13. Part I.A.7.d. - the *Total Discharge Flow (gph)* and *Hourly Heat Load (BTU)* columns have been switched.
14. Part I.A.13.b. - the words "at least" have replaced "approximately" in the following requirement: "The permittee shall equip all traveling intake screens with fish holding buckets to hold collected organisms in *at least* 2 inches of water while they are lifted to the fish return system."
15. Part I.A.13.e. – "*both* intake structures" has been changed to "*any* intake structure" to take into consideration the possibility that Canal Station will utilize one intake (for example, this could be the case if intake flow is reduced because of the installation of cooling towers).
16. Part I.A.13.*h.* is now Part I.A.13.*i* and reference to Part I.A.13.b-e has been has been changed to simply Part I.A.13.
17. The language in Part I.A.17 has been replaced with ***"****This permit may be modified in accordance with 40 Section 122.62(a)(3) if the standards or regulations on which the permit is based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit is issued.*"
18. The following modifications have been made to Part I, Section B – Monitoring and Reporting:
    a. "*the Proposal for Information Collection (PIC) , the Comprehensive Demonstration Study (CDS)*" has been removed;
    b. Sharon *Zaya* is now Sharon *DeMeo*;
    c. Notifications and Reports required by this permit shall also be submitted to:
    Jack Schwartz (Telephone: 978-282-0308 X122)
    Massachusetts Division of Marine Fisheries
    30 Emerson Avenue
    Gloucester, MA 01930
19. Modifications have been made to Section C – State Permit Conditions in order to incorporate by reference the standard conditions contained in 314 CMR 3.19 and MassDEP's water quality certification. The following language has been added:
    "pursuant to M.G.L. Chap. 21, §43 *and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.*
    2. This authorization also incorporates the state water quality certification issued by MassDEP for this permit under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. Any additional requirements contained in Massachusetts' water quality certification are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11."