August's Dry Day Flow is the average of all dry day flows for the period from 9/2/2007 to 8/31/2008. Dry Day Flow is calculated by averaging influent flows over the previous 365 days during dry weather.

In August, both the weekly and monthly concentrations of TSS were below permit limits. TSS, or Total Suspended Solids in the effluent, is a measure of the amount of solids that remain suspended after treatment.

In August, both the maximum daily and monthly concentrations of TCR were below permit limits. TCR, or Total Chlorine Residual in the effluent, is a measure of the amount of chlorine that remains after the disinfection/dechlorination process. If the chlorine residual in the effluent is too high, it may threaten marine organisms.

In August, all permit conditions for Fecal Coliform were met. Fecal Coliform is an indicator of the presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. There are four conditions in the permit that must be met: daily geomean; weekly geomean; 10% of all samples; and greater than three consecutive samples not to exceed 14,000 col/100mL.
Total Power Demand for August was just slightly higher than the FY09 projections (+5%) and was similar to the FY08 actual Power Demand (+4%). Total Plant Flow was 12% greater than the 8-year historical average for the month (328 MGD actual vs. 293 MGD expected) which accounts for approximately 3% of the increase in power demand.

Power generated on-site was 28% higher than the FY09 target for August due to higher than expected generation by the CTGs and the Hydro turbines. The CTGs operated for a total of 78.6 hours from August 12-20 to allow for NSTAR work, for 0.3 hours for maintenance/checkout purposes, and for 2 hours for a demand response event on August 21 (see Ops and Maint. Report section for details). The Hydro turbine system power generation was 9% higher than target, while the STG power generation was 16% below target due to lower than target gas generation.

The DiGas, STG, and the Hydro turbine systems all exceeded their 95% availability target for the month of August with the DiGas system at 100% availability.

Under the current energy supply contract, all of DI's energy is purchased in real time. The total energy price in August was 13% below the FY09 target for the month due to lower than budgeted spot energy prices. The total energy price includes spot energy price, transmission & distribution charges, and ancillary charges. Please note the July and August FY09 total energy price are estimates as the invoices have not been received.

DI participated in one (1) demand response event test in August (see Ops and Maintenance Report section for details).

Deer Island participates in the ISO-New England Load Response Programs. By agreeing to have its Combustion Turbine Generators available to run and thus relieve the New England energy grid of Deer Island's load during times of high energy demand or high pricing, MWRA receives monthly Capacity Payments from ISO-NE. When it runs the CTGs at ISO-NE’s request, Deer Island receives energy payments from ISO-NE and also avoids NSTAR transmission and distribution charges. "Net Avoided Cost" is the avoided NSTAR payments offset by the cost of running the CTGs, and the energy payments from ISO-NE.

Cumulative savings are the sum of Net Avoided Costs and monthly Capacity Payments.
Total Plant Flow for the month of August (328 MGD) was 12% higher than the target 8-year average flow estimate for the month (293 MGD) with precipitation 54% higher than the 8-yr average precipitation for the month (4.47 inches actual vs. 2.93 inches expected). It is likely the rain that fell in August was largely absorbed into the dry ground thus not impacting flows as significantly as would be expected.

Environmental/Pumping:
Precipitation for the month of August was much higher than the 8-year historical average for the month with a total of 4.47 inches of precipitation. Rain occurred fairly frequently during the first half of the month while the second half of the month remained almost free of rain. Measurable rain fell on eleven (11) days totaling 4.47 inches, 54% higher than the 8-year historical average rainfall for the month. There were two (2) separate blending events on two (2) days during the month due to rain. Torrential flooding rains fell on a number of days in August. These storms produced two (2) secondary blending events totaling 8.64 hours and 67.0 Mgal of flow blended with secondary effluent.

The disinfection dosing rate was 11% lower than the FY09 target and 12% lower than the FY08 actual for August. Similarly, actual sodium hypochlorite use in gallons was also below anticipated levels for disinfection.

The overall disinfection dosing rate (target and actual) is dependent on plant flow, target effluent total chlorine residual levels, effluent quality and NPDES permit levels for fecal coliform.

99.3% of all plant flows were treated at full secondary for the month. August started out as a very wet month with measurable rain falling on 11 days totaling 4.47 inches, 54% higher than the 8-year historical average rainfall for the month. There were two (2) separate blending events on two (2) days during the month due to rain. Torrential flooding rains fell on a number of days in August. These storms produced two (2) secondary blending events totaling 8.64 hours and 67.0 Mgal of flow blended with secondary effluent.

The plant achieved a maximum average hourly flow rate of 1,035 MGD on August 10th as a result of a storm event producing a total of 1.25 inches of precipitation for the day. Significant rain had already fallen two days earlier with 1.31 inches of precipitation which left the ground water table high during this period. Pumping and treatment operations continued without incident through this storm event, as well as, throughout the entire month.
Secondary Treatment:
There were two (2) separate secondary blending events that occurred on two (2) days in the month due to torrential rain events. These secondary blending events totaled 8.64 hours and 67.0 Mgal of flow was blended with secondary effluent. Overall, 99.3% of the flow for the month received secondary treatment. The secondary process maximum limit during this event and for the entire month was 700 MGD. No permit exceedences occurred as a result of any of these secondary blending events.

Disinfection:
The relining of sodium hypochlorite storage Tank 2 was completed by the contractor and the tank has been turned over to Operations to be placed back in service. The relining of hypochlorite storage Tank 4 is currently in progress and is expected to be completed in mid-October.

Odor Control:
The activated carbon media in three (3) of the carbon adsorber units in the East Odor Control Facility and in one (1) of the carbon adsorber units in the North Pumping Odor Control Facility was changed out as part of routine maintenance to replace spent carbon with fresh carbon media. Also, the media used in wet chemical scrubber units was changed out in four (4) wet chemical scrubber units. The scrubber media was changed out in two (2) scrubber units in the East Odor Control Facility and in one (1) scrubber unit each in the West Odor Control and in the Residuals Odor Control Facilities. The carbon and scrubber media change outs will result in improved treatment efficiency in these odor control areas.

Energy:
Deer Island is currently enrolled in the Demand Response Program. The Demand Response Program (administered by the not-for-profit Independent System Operators of New England or ISO-NE) compensates energy users for reducing their electrical consumption during a called event to help alleviate fuel supply contraints and elevated pricing in the region. DITP participated in one demand response event in August. This particular event on August 21 was an unannounced test called by ISO-NE to confirm facility and equipment availability in the event an actual demand response event is called. CTG #1 was operated for two (2) hours, as required, during this test.

"Renewable Portfolio Standard Credits" (RPS) Credits - Bids were received on August 12, 2008 for the sale of 6,145 RPS REC's. The total revenue for this sale was $256,300.

The total energy price in August was 13% below the FY09 target for the month due to lower than budgeted spot energy prices. The total energy price in August FY09 was also 13% higher than the total energy price in August FY08. The total energy price includes spot market energy prices, transmission & distribution charges, and ancillary charges. Please note the July and August FY09 total energy prices are estimates as the invoices have not been received.

DITP was taken off the electrical grid on six (6) separate days during the period from August 12 through August 20 for approximately 12 hours on each of these days to allow NSTAR to perform work involving the cross harbor electrical cable. The purpose of this outage was to permit the Army Corps of Engineers to precisely pinpoint the horizontal and the vertical position of the cable at numerous points within the Reserve Channel (South Boston). One or both CTGs were operated during this NSTAR outage and generated the majority of the power for Deer Island during these periods. Both CTGs were operated a combined total of 78.6 hours with a total output of 50.3 megawatts during this NSTAR requested outage. NSTAR had personnel standing by at both the electrical stations on Deer Island and in South Boston in case of switching issues or the need to quickly restore NSTAR power. A representative from Pratt & Whitney was also on-site to assist with the operation of the CTGs and additional DITP staff were on-island during off-hours and weekend periods to respond to any unexpected issues. The NSTAR outage proceeded without any significant issues and there were no interruptions whatsoever to the power on Deer Island. Both the EPA and DEP were notified in advance of this outage.