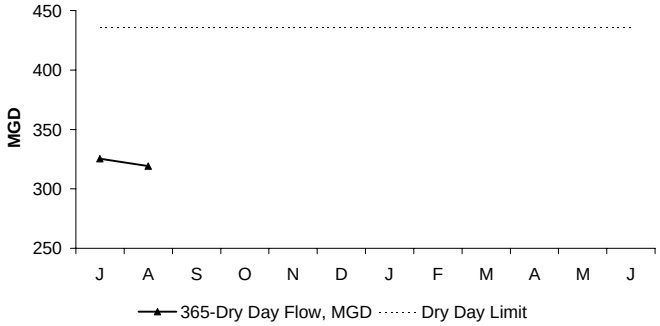
Massachusetts Water Resources Authority
Deer Island Treatment Plant Performance
August 2007

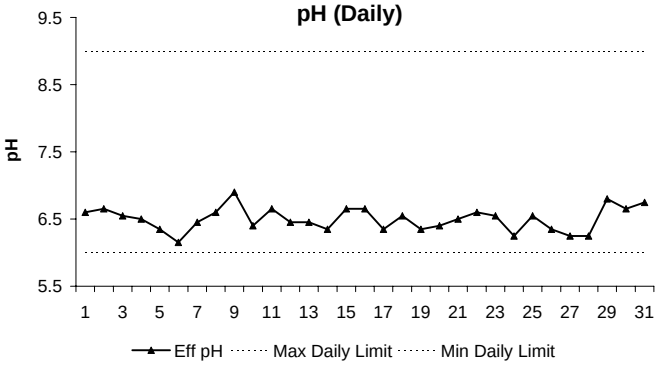
Dry Day Flow



August's Dry Day Flow is the average of all dry day flows for the period from 9/1/2006 to 8/31/2007.

Dry Day Flow is calculated by averaging influent flows over the previous 365 days during dry weather.

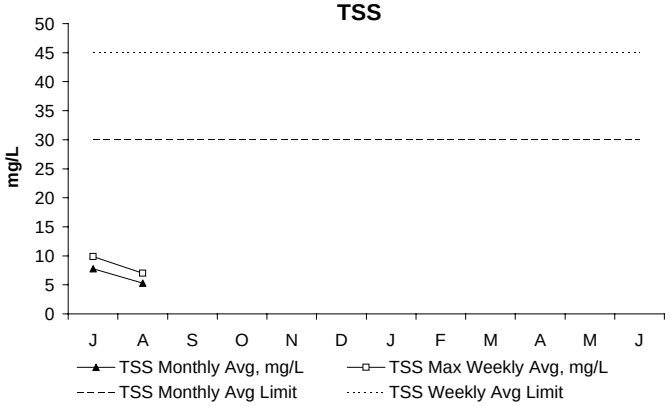
pH (Daily)



In August, all pH measurements were typical for the season and within permit limits.

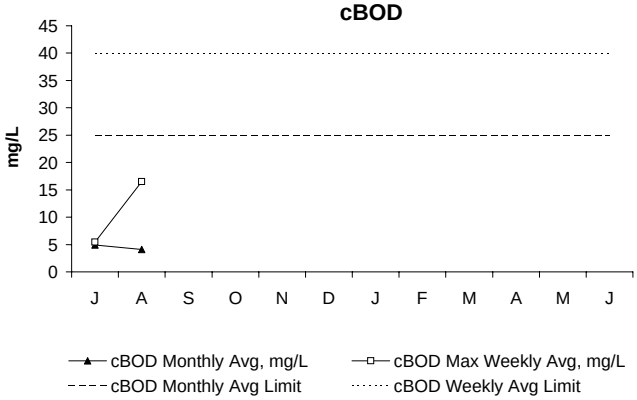
pH is a measure of the acidity or basicity of the effluent. Small fluctuations in pH do not have an adverse effect on marine environments. Because pure oxygen is used in the activated sludge reactors, the effluent pH tends to be at the lower range.

TSS



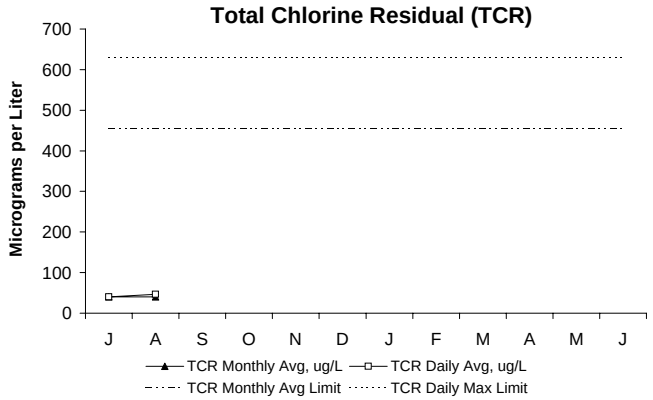
In August, both the weekly and monthly concentrations of TSS were below permit limits. TSS, or Total Suspended Solids in the effluent, is a measure of the amount of solids that remain suspended after treatment.

cBOD



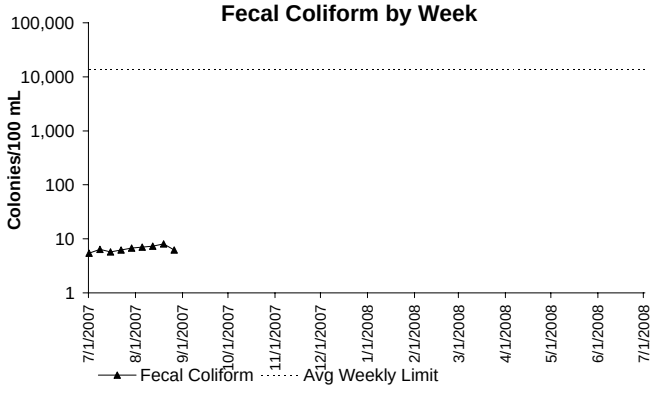
In August both the weekly and monthly concentrations of cBOD were well below permit limits. cBOD, or Carbonaceous Biochemical Oxygen Demand, is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in the environment.

Total Chlorine Residual (TCR)



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.

Fecal Coliform by Week



In August, all permit conditions 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.

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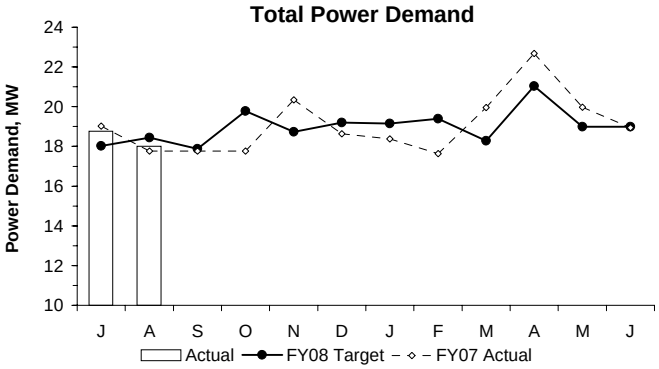
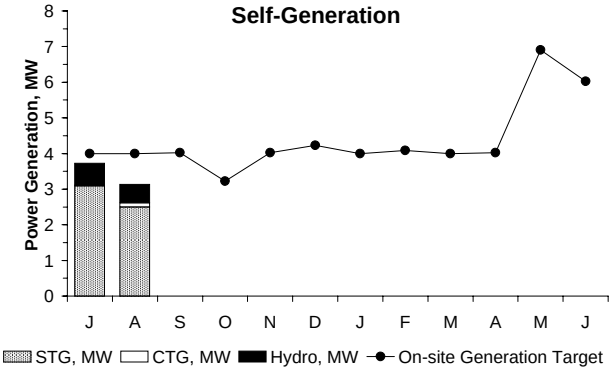
Total Power Demand



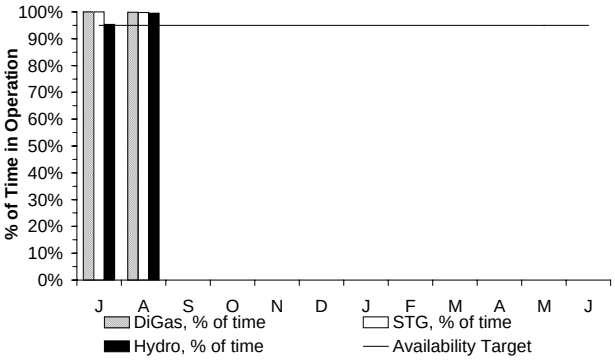
Total Power Demand for August was similar to both the FY08 target (-2%) and the FY07 actual (+1%) even though Total Plant Flow in July FY08 was 18% lower than the 8-year historical average for the month and 16% lower than the Total Plant Flow in FY07.

Self-Generation



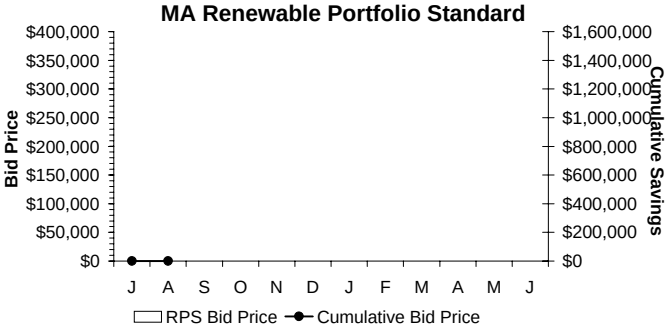
Power generated on-site was 21% lower than the FY08 target for August as both the STG and the Hydro turbine systems operated below their targets (23% and 21% lower respectively). The STG operated below target due to low gas production, a result of low sludge production. The lower Hydro turbine output is due to lower than expected plant flow. The CTGs, however, operated 6% above target on three (3) days for maintenance/checkout purposes, on one (1) day due to high electricity spot market prices, and on one (1) day for a demand response event.

Self-Generation Equipment On-Line



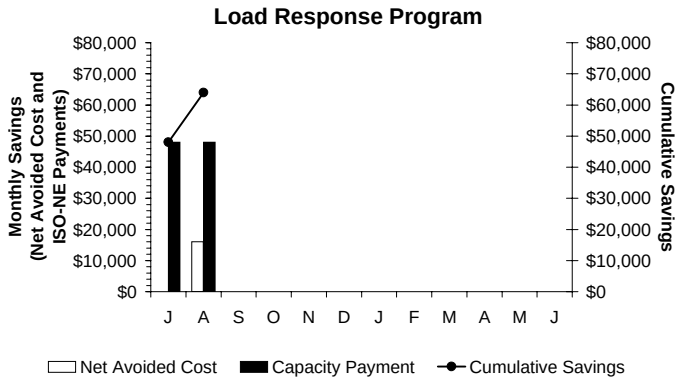
The DiGas, STG, and Hydro turbine systems all exceeded their 95% availability target for the month.

MA Renewable Portfolio Standard



RPS prices reflect the bid prices on the date that bids are accepted. Cumulative savings reflect the total value of bids received to date. There were no RPS bids in August.

Load Response Program

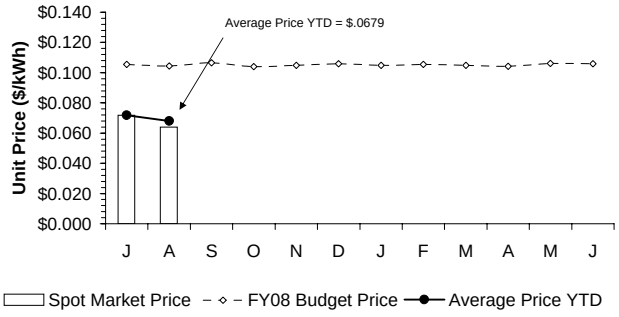


Net Avoided Cost includes ISO-NE energy payments, cost to run the CTGs, and the avoided NSTAR transmission and distribution costs. DITP is currently enrolled in the Demand Response Program. Capacity Payment is a monthly payment received to ensure capacity and availability under the requirements for enrollment in the Demand Response Program. Please note that July and August Capacity Payments are an estimate as the payments have not been received.

DI participated in one (1) demand response event in August.

Energy Supply Pricing

Does not include NSTAR's transmission and distribution costs



Under the current energy supply contract, all of DI's energy is purchased in real time. The August FY08 estimated spot market price of $0.064 per kilowatt hour was slighlty lower than the previous month and 39% below the August budgeted price of $0.104 per kilowatt hour.

Please note that August pricing is an estimate as the invoice has not been received.

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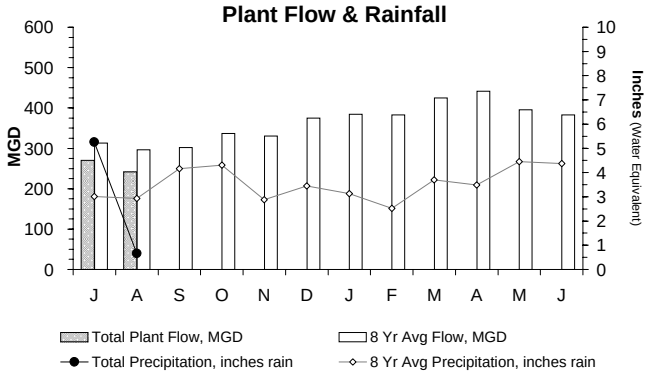
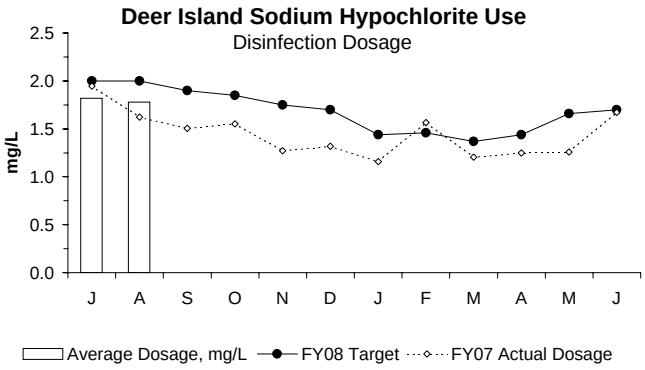
Deer Island Treatment Plant Performance



Total Plant Flow for the month of August (242.0 MGD) was 18% lower than the 8-year average flow estimate for the month (296.4 MGD) as rainfall was 77% lower than the 8-yr average rainfall for the month (0.66 inches actual vs. 2.93 inches expected). The average daily plant flow never reached 300 MGD on any day this month due to the lack of precipitation.



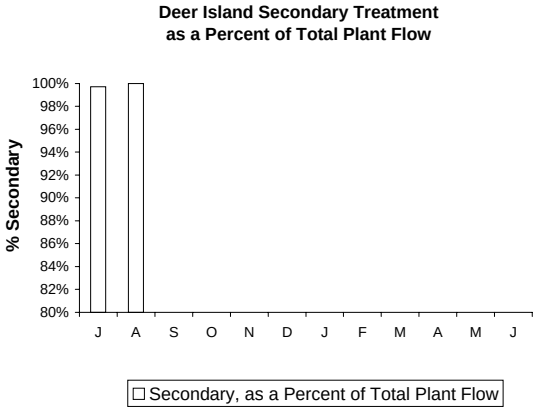
The disinfection dosing rate was 11% lower than the FY08 target for August but was 10% higher than the FY07 actual for the month. The higher dosing rate in FY08 is likely due to the lower plant flow in FY08 (242.0 MGD) than in FY07 (289.1 MGD). Lower plant flow requires higher dosing as the wastewater is more concentrated.

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.

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
J	1	1	0	99.7%	3.20
A	0	0	0	100.0%	0.00
S					
O					
N					
D					
J					
F					
M					
A					
M					
J					
Total	1	1	0	99.9%	3.2

There were no blending events in August as the total precipitation of 0.66 inches was 77% lower than the 8-year average rainfall for the month of 2.93 inches and the largest rain event on August 8 only produced 0.28 inches of rain. The maximum hourly flow rate of 561.5 MGD on August 30 was well below the current secondary process maximum limit of 700 MGD.



In August, 100.0% of the total plant flow to DITP was treated through secondary treatment. The Maximum Secondary Capacity for the most of the month was 700 MGD (set on April 4, 2007) except on five (5) partial days when Secondary Battery C was shut down for a major RSL isolation valve maintenance project and the Maximum Secondary Capacity was 540 MGD during those periods.

Deer Island Operations & Maintenance Report

Environmental/Pumping:

Precipitation for the month of August was much lower than the 8-year historical average for the month with a total of 0.66 inches of precipitation falling on five (5) days. August's total precipitation was 77% lower than the 8-year average rainfall for the month of 2.93 inches. Similarly, overall total plant flow for the month was 18% lower than expected (242.0 MGD actual vs. 296.4 MGD target).

The plant achieved a maximum average hourly flow rate of 561.5 MGD on August 30 during a wet test of a new VFD for pump 2-1 at the Caruso Pump Station. Chelsea Creek Headworks flow was restricted for several hours in the morning to allow flow to be redirected to the Caruso Pump Station. The subsequent flow through the pump station during this test elevated the overall plant flow to DITP in a relatively short amount of time. The plant flow to DITP just prior to receiving the flow from the Caruso Pump Station was approximately 180 MGD. Chelsea Creek Headworks flow was similarly rerouted for several hours on August 1, 19, and 20 in order to perform installation work or testing on the new VFD. Pumping and treatment operations continued without incident through these events, as well as, throughout the entire month.

Deer Island Operations & Maintenance Report (continued)

Secondary Treatment:
100.0% of all flows were treated at full secondary for the month of August. There were no blending events in August as both precipitation and plant flows were well below target with plant flow never approaching the secondary process maximum limit of 700 MGD. The secondary process maximum limit was temporarily reduced to 540 MGD when Secondary Battery C was shut down on five (5) partial days during the month (August 6-7 and August 13-15) to perform a major RSL isolation valve maintenance project. This project was carefully planned to occur while flows were at its seasonal low and during dry weather conditions.

Two maintenance staff involved in the valve replacement were sprayed with sludge when back pressure in the Secondary C sludge line caused the pipe to separate, resulting in a discharge of about 100 gallons of sludge into the facility. The two were decontaminated on-site and taken to the hospital as a precautionary measure. No serious injuries were reported and the site was cleaned. The incident did not cause service interruptions or any damage to the plant.

DITP continues to monitor and test the secondary treatment system to determine the maximum flow through secondary that can be achieved without compromising the secondary process.

Disinfection:
The contract work to replace the internal lining in hypochlorite storage tank #1 began in June and continued through August. The new lining for hypochlorite tank #1 was nearing completion by the end of the month and a dye test to check the integrity of the new liner is scheduled for September. Preparation work to replace the liner in tank #3 also began in August and it is hoped the contractors will be able to complete the lining replacement for tank #3 by the end of this year.

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 15 was an unnanounced test called by ISO-NE to confirm facility and equipment availability in the event a normal demand response event is called. CTG #1 was operated for approximately two (2) hours, as required, during this test.

"Renewable Portfolio Standard Credits" (RPS) Credits - There were no RPS bids in August.

Spot market pricing in August FY08 decreased slightly in comparison to the spot market pricing in July and remains 39% below the FY08 average budgeted price for the month. August pricing is an estimate as the invoice has not been received to date.

CTG #2 was also operated for almost 2.5 hours on August 2 due to the high spot market pricing during this period of time.

The heat loop piping system, which conveys thermal energy from the DITP boilers to supply plant needs, was shut down from 11:00PM on August 20 to approximately 2:20PM on August 22 for the installation of new isolation valves. No negative impacts were observed during this shutdown (i.e. no venting and digester temperatures remained fairly stable). The valve installation project will continue in September with several more days when the heating loop will need to be shut down.

Regulatory:
Emissions compliance testing on the Residuals Odor Control (ROC) system on DITP was conducted by consultants in early August. MA DEP requires that DITP conduct emissions compliance testing for the various emission units once every 5 years. The two ROC emission units were tested for Total Reduced Sulfur (TRS) at the outlet (stack) of the odor control system and for non-methane hydrocarbons (NMHC) at the inlet to each emission unit. Even though it is not required by the operating permit, non-methane hydrocarbons (NMHC) were also tested at the stack. The final report summarizing the test results is currently being prepared by the consultants.

Several DEP officials were onsite at DITP on August 14 for an unannounced site visit of the treatment plant. The officials were given a comprehensive plant tour covering the entire wastewater and residuals treatment facilities and process areas along with a walkthrough of the DLS Central Laboratory.