Monitoring System Verification Report
Burke Hospital

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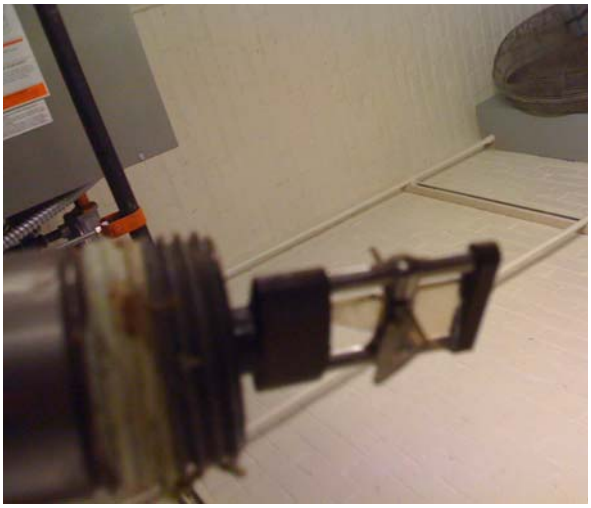
The CHP system at Burke Hospital has monitoring equipment installed to measure thermal and electrical performance of the system for the NYSERDA performance-based incentive program. The monitoring system was installed by CDH Energy in May 2008. The 1st year monitoring period officially started on October 1, 2008. The monitored data are available at NYSERDA's CHP web site.

As part of the CHP performance program, CDH Energy returned to the site after the 1st year of monitoring to confirm and verify proper measurements are being taken. During the site visit on Wednesday, November 25 we confirmed proper operation of the power meters and verified water flows and temperatures by comparing them to other instruments:

Ultrasonic Flow Meter:	Fuji ParaFlow-X Ultraonic (transit-time) meter, FLD22 sensing element, spacing=2.346 inch Schedule 40 steel, 4 inch (4.5 in OD, 0.237 wall, no liming)
Temperature Probe:	Fluke with type-K TC (with 0.5ºF of NIST thermometer)

The insulation was removed from the pipe and the ultrasonic flow meter was installed as shown in Figure 1. The turbine was also inspected and cleaned (no appreciable buildup was noted).



Inspecting the Onicon Turbine

FLD22 Ultrasonic Sensor on Pipe

Figure 1. Flow Meter Inspection ad Measurements

The flow measurements are listed in Table 1. The two flow meters agreed to with 10%. Temperature readings were taken by inserting the Fluke probe under insulation. This crude measurement approach agreed with the installed Mamac temperature sensors to within 2-3ºF on the supply side and to within 0.5ºF on the return side. The larger error on the supply temperature

was due to the continuous fluctuation of conditions on that side of the system because of engine load variations.

Table 1. Measurements Taken at Site

	CHECK - PortaFlow Ultrasonic	INSTALLED - Onicon Flowmeter	Difference
9:30 AM	190 - 210	174 - 190	8.4% - 9.5%
10:00 AM	188 - 208	174 - 188	7.4% - 9.6%
10:20 AM	204 - 206	183 - 186	10.3% - 9.7%
11:00 AM	210 - 212	189 - 190	10.0% - 10.4%

Loop Supply Temperature

CHECK - Fluke Probe	INSTALLED - Mamac Sensors	Difference
208.1	211.9	-3.8
202.1	203.9	-1.8
205.7	208.7	-3

Loop Return Temperature

CHECK - Fluke Probe	INSTALLED - Mamac Sensors	Difference
158.4	159.7 158.9	-0.5

Conclusion: The current instrumentation at the site is accurately measuring the performance of the CHP System