

THE Q – Database Notes

Table 1 Database Notes

Data Collection	<u>Data Logger:</u> <u>Data Collection Interval:</u> <u>Collection Method:</u>	Obvius AcquiSuite A8812 1 – Minute Nightly Obvius Building Manager Online upload to CDH servers.
Site Information	<u>Cogeneration Units:</u> <u>Nameplate Capacity:</u> <u>Heat Recovery Medium:</u> <u>Heat Recovery Uses:</u> <u>Excess Heat:</u>	Two (2) Aegis PowerVerter PV-75 unit 75 kW Hot Water Space Heating Rejected to atmosphere using dump radiator
DG/CHP Generator Electrical Output	<u>Engineering Units:</u> <u>Energy Measurement (net/gross):</u> <u>Measurement Type:</u>	kWh Net generator power Calculated using kW measurements from each individual cogen power meter and parasitic power meter (Veris H8035 typ)
DG/CHP Generator Electrical Output Demand	<u>Engineering Units:</u> <u>Measurement Type:</u>	kW Calculated from generator electrical output; max kW / int * # intervals
DG/CHP Generator Fuel Input	<u>Engineering Units:</u> <u>Measurement type:</u>	CF Calculated using pulse outputs from Romet RM2000 gas meters for each cogen unit.
Other Fuel Input	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	- -
Utility Energy Import	<u>Engineering Units:</u> <u>Measurement Type:</u>	kWh Calculated as sum of kW measurements from two power meters (Veris E50 typ) installed on mains.

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Utility Energy Import Demand	<u>Engineering Units:</u> <u>Measurement Type:</u>	kW Calculated from utility energy import; max kW / int * # intervals
DG/CHP Useful Heat Recovery	<u>Engineering Units:</u> <u>Measurement Type:</u>	<u>MBtu/hr</u> Calculated using 1-minute flow and temperature measurements
DG/CHP Rejected Heat Recovery	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	MBtu/hr Calculated using 1-minute flow and temperature data.
Generator Status	<u>Engineering Units:</u> <u>Measurement Type:</u>	Hours 0 to 1, system on / system off. Generator output must be above 30 kW to be considered on.
Ambient Temperature	<u>Engineering Units:</u> <u>Measurement Type:</u>	Deg. F Weather Underground airport code LGA.

Table 2 Event Timeline

Date	Event
12/7/2016	CDH on site to install data logger. Data collection begins.

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Range Checks

Table 3. Range Checks

Data Point	Units	Hourly Data Calculation Method	Database Lower Range	Database Upper Range	Notes
DG/CHP Generator Output (WG_d)	kWh	Sum	-5	175	
DG/CHP Generator Output Demand (WG_KW_d)	kW	Max	-5	175	$WG_KW_d = \max(WG_d) * \# \text{ Intervals}$
DG/CHP Generator Gas Use (FG_d)	Cfh/int	Sum	0	40	
Total Facility Purchased Energy (WT_d)	kWh/int	-	-	-	
Total Facility Purchased Demand (WT_KW_d)	kW	-	-	-	
Other Facility Gas Use (FT_d)	cf/int	-	-	-	
Useful Heat Recovery (QHR_d)	MBtu	-	0	1,500	
Unused Heat Recovery (QD_d)	MBtu	-	0	1,500	
Status/Runtime of DG/CHP Generator (SG_d)	hr	-	0	1	0-1, System On/System Off
Ambient Temperature (TAO)	°F	Avg	-20	130	WUG Airport Code: NYC

Notes:

1. This table contains values from *the_q.csv*

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Relational Checks

Table 4. Relational Checks

Evaluated Point	Criteria	Result

Notes:

1. This table contains values from *relational_checks.pro*