

Trump Tower - Database Notes

Table 1 Database Notes

Data Collection	Data Logger: Data Collection Interval: Collection Method: Timestamp Reference:	Obvius Aquisuite (CDH) 1-minute Obvius Upload Eastern Standard Time
Site Information	Cogeneration Units: Nameplate Capacity: Heat Recovery Medium: Heat Recovery Uses: Excess Heat Use:	2 AEGEN ThermoPower 75 engine generators 150 kW Hot water Space Heating, Domestic Hot Water Rejected from the hot water loop to heat exchanger connected to building cooling tower loop
DG/CHP Generator Electrical Output	Engineering Units: Energy Measurement (net/gross): Measurement Type: Generator Power Measurements: Parasitic Power Measurements:	kWh Net Accumulated energy per interval Two – one for each engine One for entire parasitic panel
DG/CHP Generator Electrical Output Demand	Engineering Units: Measurement Type:	kW Based on peak 1-minute power from energy measurement
DG/CHP Generator Fuel Input	Engineering Units: Measurement Type:	CF Engine heat rate calculated from utility data and measured generator energy output
DG/CHP Useful Heat Recovery	Engineering Units: Heat Measurement Type:	MBtu (calculated value) One thermal loop - flowmeter, multiple temperature measurements (across useful load)

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DG/CHP Unused Heat Recovery	Engineering Units: Heat Measurement Type:	MBtu (calculated value) Flowmeter, multiple temperature measurements (across steam piping header)
DG/CHP Status/Runtime	Engineering Units:	0 – 1, System On/System Off
Facility Purchased Energy	Engineering Units:	Not collected
Facility Purchased Demand	Engineering Units:	Not collected
Other Facility Gas Use	Engineering Units:	Not collected

Note: See addendum for further details

Table 2 Event Timeline

Date	Event
June 10, 2010	Initial Visit (Adam Walburger)
July 27, 2010	Datalogger and sensors installation. DAS system operational but incomplete, partially verified sensor readings (Adam Walburger, Jeff Cosgrove).
August 1, 2010	Gas data are collected from monthly Con Ed meter readings (via internet). Monitoring period begins.
August 25, 2011	Environmental testing performed. First year CHP verification performed.
September 22, 2011	Internet connection from logger severed at site. Clock drift begins from lack of internet connection
November 11, 2011	CDH performs manual data collection from logger
December 19, 2011	CDH performs manual data collection from logger Engine tuning and Environmental testing performed.

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Range Checks

Table 3. Range Checks

Data Point	Hourly Data Method	Units	Sensor Lower Range	Sensor Upper Range	Database Lower Range	Database Upper Range	Notes
DG/CHP Generator Output	Sum	kWh/int	0	150/int	0	4	
DG/CHP Generator Output Demand	Max	kW	0	150	0	250	
DG/CHP Generator Gas Use	Sum	cf/int	-	-	0	1000	Monthly billing data collected via internet
Total Facility Purchased Energy	Sum	kWh/int	-	-	-	-	Not installed
Total Facility Purchased Demand	Max	kW	-	-	-	-	Not installed
Other Facility Gas Use	Sum	cf/int	-	-	-	-	Not installed
Useful Heat Recovery	Sum	MBtu/int	0	1000	0	1000	Calculated Value
Unused Heat Recovery	Sum	MBtu/int	0	1000	0	1000	Calculated Value
Status/Runtime of DG/CHP Generator	Sum	hr	0	1	0	1	0 – 1, System On/System Off
Ambient Temperature	Avg	°F	-30	130	-30	130	

Notes:

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

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Relational Checks

Table 4. Relational Checks

Evaluated Point	Criteria	Result
FG	$WG > 0.5$ and $FG \leq 0$	DQ flag for FG set to 2
WG	$FG > 6$ and $WG \leq 0$	DQ flag for WG set to 2

Notes: FG – DG/CHP Generator Gas Use

WG – DG/CHP Generator Output