Toledo Building – Database Notes

Table 1 Database Notes

Data Collection	Data Logger: Data Collection Interval: Collection Method:	Obvius Aquisuite A8812 1 – Minute Obvius Upload Manager to CDH servers
Site Information	Cogeneration Units: Nameplate Capacity: Heat Recovery Medium: Heat Recovery Uses: Excess Heat:	Aegen TP-75LE Synchronous w/ Inverter 75 kW Hot Water Domestic hot water, space heating, pool heating Rejected to atmosphere by dump radiator
DG/CHP Generator Electrical Output	Engineering Units: Energy Measurement (net/gross): Measurement Type:	kWh Net Power (calculated from gross and parasitic measurements) Accumulated kWh
DG/CHP Generator Electrical Output Demand	Engineering Units: Measurement Type:	kW Calculated : accumulated kWh/int * # intervals
DG/CHP Generator Fuel Input	Engineering Units: Measurement type:	CF Pulse output from utility meter (not yet installed)
DG/CHP Useful Heat Recovery	Engineering Units: Heat Measurement Type:	MBtu/hr Calculated from 1 minute analog flow and temperature data
DG/CHP Unused Heat Recovery	Engineering Units: Heat Measurement Type:	MBtu/hr Calculated from 1 minute analog flow and temperature data
DG/CHP Status/Runtime	Engineering Units: Measurement Type:	Hours Calculated based on generator output

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Facility Purchased Energy	Engineering Units: Measurement Type:	kWh Accumulated kWh
Facility Purchased Demand	Engineering Units: Measurement Type:	kW Calculated : accumulated kWh/int * # intervals
Other Facility Gas Use	Engineering Units: Measurement Type:	- -

Table 2 Event Timeline

Date	**Event**
September 9, 2014	CDH on site to install data logger and terminate sensor wiring, data collection begins.
December 4, 2014	Cogen unit operation begins.
March 30, 2015	CDH on site to verify metering.
November 22, 2019	Useful loop temperature no longer reporting. Heat recovery and related thermal efficiency not calculated.
January 29, 2020	Useful loop temperature reporting.
June 16, 2020	Supply loop temperature no longer reporting. Heat recovery and related thermal efficiency not calculated.
August 14, 2020	Supply loop temperature reporting.
July 5, 2021	Data reporting to DER website ends. Thermal efficiency consistently exceeds 65%.

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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/int	Sum	0	2	
DG/CHP Generator Output Demand (WG_KW_d)	kW	Max	0	100	*WG_KW_d = WG_d * # Intervals*
DG/CHP Generator Gas Use (FG_d)	cf/int	-	-	-	*Meter not yet installed*
Total Facility Purchased Energy (WT_d)	kWh/int	Sum	0	10	
Total Facility Purchased Demand (WT_KW_d)	kW	Max	0	600	*WT_KW_d = WT_d * # Intervals*
Other Facility Gas Use (FT_d)	cf/int	-	-	-	
Useful Heat Recovery (QHR_d)	MBtu/hr	Avg	0	800	
Unused Heat Recovery (QD_d)	MBtu/hr	Avg	0	800	
Status/Runtime of DG/CHP Generator (SG_d)	hr	-	-	-	
Ambient Temperature (TAO)	°F	Avg	-20	130	*WUG Airport Code - NYC*

Notes:

1. This table contains values from *birchwood_toledo.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*