

Rivercross – Database Notes

Table 1 Database Notes

Data Collection	<u>Data Logger:</u> <u>Data Collection Interval:</u> <u>Collection Method:</u>	Tecogen Control System 5 – Minute Daily email to Frontier Energy (FE) data collection email
Site Information	<u>Cogeneration Units:</u> <u>Nameplate Capacity:</u> <u>Heat Recovery Medium:</u> <u>Heat Recovery Uses:</u> <u>Excess Heat:</u>	Four (4) Tecogen INV-100e+ 100 kW (100 kW each) Hot Water Domestic hot water, space heating Unknown
DG/CHP Generator Electrical Output	<u>Engineering Units:</u> <u>Energy Measurement (net/gross):</u> <u>Measurement Type:</u>	kW / kWh Net Power Calculated using average kW output from each INV-100e+ unit and two measured parasitic loads.
DG/CHP Generator Fuel Input	<u>Engineering Units:</u> <u>Measurement type:</u>	CF Accumulated cubic feet (1000 cf/pulse)
DG/CHP Useful Heat Recovery	<u>Engineering Units:</u> <u>Heat Measurement Type:</u>	MBtu/hr Heat recovery calculated by Frontier Energy from using measured average 15-minute interval flow and temperatures
Facility Purchased Energy	<u>Engineering Units:</u> <u>Measurement Type:</u>	kWh / kWh Calculated from accumulated kWh from two ConEd electric meters.
Other Facility Gas Use	<u>Engineering Units:</u> <u>Measurement Type:</u>	- -

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Table 2 Event Timeline

Date	Event
August 03, 2019	Data collection begins.
October 29, 2019	Average kW power data added to data files.
November 05, 2019	Data added to NYSERDA DER website, beginning October 29, 2019.
January 25, 2022	Flow data was constant from December 3, 2021, through January 25, 2022. The system reported elevated thermal efficiency during this period.
February 28, 2022	A 10% pressure compensation adjustment was applied to fuel input data, for an implied pressure of 1.45 psig.

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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)	kWh/int	Sum	0	500	$WG=(WT1+WT2+WT3+WT4) - WPAR$
DG/CHP Generator Gas Use (FG)	cf/int	Sum	0	90000	
Total Facility Purchased Energy (WI)	kWh/int	Sum	0	500	$WI= WB1 + WB2$
Other Facility Gas Use (FT)	cf/int	-	-	-	
Useful Heat Recovery (QU)	MBtu/hr	Avg	0	2000	$QU=0.480*FL*(TLS-TLR3)$
Unused Heat Recovery (QD)	MBtu/hr	Avg	0	2000	$QD=QR=0.480*FL*(TLR3-TLR4)$
Ambient Temperature (TAO)	°F	Avg	-20	130	<i>WUG Airport Code - LGA</i>

Notes:

1. This table contains values from *rivercross.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*