

Staff Interrogatories 12/15/2015

12/23/15 Response

14-2242-EL-REN, Buckeye Biogas LLC

1. PUCO came back with this formula for incorporating the heat capacity of a 50:50 mix of water and glycol.

$$Q = V \rho C h \frac{(T1 - T2)}{F}$$

<i>Q = Megawatt hours of thermal energy</i>
<i>V = volumetric flow rate of glycol/water mixture, 175 gallons per minute</i>
<i>ρ = density of glycol mixture, 8.34 lb per gallon</i>
<i>C = heat capacity of glycol/water mixture, 0.89 $\frac{BTU}{lb^{\circ} F}$</i>
<i>h = number of minutes the CHP unit operated in a month</i>
<i>T1 = hot temperature of CHP unit heat loop, ° F</i>
<i>T2 = cold temperature of CHP unit heat loop, ° F</i>
<i>F = conversion factor, 3,412,142 $\frac{BTU}{MWH}$</i>

Response: We agree with this formula.

2. Can portable flow meter testing frequency be increased? How is a reading that is +/- 10% from expected flow in GPM managed?

Response: We will use the portable flow meter to test quarterly (4x/year). In the event of a flow meter reading that is +/-10% from expected flow in GPM, the following steps will be taken;

- a). perform maintenance on pump
- b). replace pump
- c). discount REN for the quarter if reading is -10% from expected reading.

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Summary: Reply electronically filed by Mr. Bruce Bailey on behalf of Buckeye Biogas, LLC