In the Loop

October 2016

DULUTH ENERGY SYSTEMS

A Note from the General Manager

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Last month I used this space to explain the Capacity and Consumption Charge components of your monthly Duluth Energy Systems billing statement. This month, I'd like to explain how we actually measure the amount of steam consumed in your building. More importantly, I want to mention a couple things you can do to reduce your steam consumption (and your Consumption Charge).

To measure energy used in your buildings, we don't actually measure or meter steam. As steam gives up its energy (heat) in your building while doing things like keeping people warm, making hot water, brewing beer, or whatever else steam is used for, it changes state from a gas (steam) to hot water (condensate). We measure the flow of this condensate out of your building to determine how much steam was used in your building. Remember that old riddle . . . which weighs more, a pound of feathers or a pound of rocks? It's the same idea with steam and condensate. One pound of condensate leaving your building is produced by one pound of steam entering your building. As condensate flows through the meter in your building, a wheel inside the meter rotates. These rotations are counted; the difference between the total number of rotations at end-of-month and the number of rotations at the beginning-of-month is converted to pounds of condensate (i.e. steam). An electronic transponder attached to each meter "radios" the number of revolutions to a receiver which interfaces with our billing system.

How can you slow down that wheel inside the meter and thereby reduce your Consumption Charge? A human gives off a certain "vibe" when he's cool, think Elvis. Steam on the other hand gives off heat and turns into condensate when it's cool. All steam ALWAYS wants to be cool and ALWAYS wants to turn into condensate . . . it's a law of physics. Because of this, mechanical devices called steam traps are installed in your heating system pipes to separate and remove the condensate from the steam. When steam traps malfunction, both condensate AND steam are removed from the pipes and sent to your meter. This is bad because the steam is still full of heat when it's removed from your system! This is a huge, big league waste. Two suggestions:

1. Replace any missing or damaged steam pipe insulation. Bad pipe insulation means more steam is giving up more heat and more condensate is going through your meter before anything useful (like heating your building) has happened.

2. Have a qualified plumber or mechanical contractor inspect your steam traps at least once a year and replace any malfunctioning traps immediately. A small investment in this simple maintenance task will save you big money in the long run.

Want some help figuring out where your meter is and how many steam traps you own? Call us! We'd be happy to stop by and give you an exciting, fascinating tour of your steam system. There is absolutely no charge for this service.

Duluth Energy Systems doesn't just provide thermal energy; we pride ourselves in providing our customers with service to go along with the heat. We're cool that way.

Here to Serve You – Getting to Know Jason Youngberg

Jason Youngberg is one of the newest members of our team, joining our organization in June. Jason is originally from Moose Lake, MN, but has seen much of the world since he left for Texas at four years old. After graduating from high school in Texas, Jason joined the Navy where he was stationed primarily in Virginia. He has a distinguished military background, serving as an Electronic Warfare Technician on the USS Enterprise, as military police on Naval Station Norfolk, and on the Coast Guard Base in Portsmouth, VA. Jason served our country on two active deployments, including operations in Iraq, Kosovo, and Afghanistan.

During his service, Jason received training and education through the Navy Law Enforcement School and Electronic Warfare School. This experience has readied him to address problems before they arise, tackle issues quickly and calmly, and to work closely with teams to get things done right. After leaving the Navy, Jason returned to Minnesota where he worked in the Plumbers and Pipefitters UA Local 11 in Duluth. He is still an active member in UA Local 11.

Jason Youngberg
Distribution
Supervisor

In his role for Duluth Energy Systems, Jason is responsible for keeping our distribution system running effectively and helping our customers troubleshoot connections and energy distribution in their buildings. If the challenge is outside of our system connection, he helps customers diagnosis the issue so they have the information they need for repairs. Jason has also been developing a new maintenance program to help us get ahead of any potential distribution challenges. He is looking forward to managing new distribution system construction in Duluth.

When he's not working, Jason can be found out on the lakes fishing or on the Superior Hiking Trail. These outdoor activities are just part of what he loves about Duluth, where you can go from the Superior Hiking Trail to a sushi dinner downtown on the same day. He loves Duluth's mix of small town and big city all in one.

About joining the Ever-Green Energy team in Duluth, Jason notes that "I have worked for a lot of different companies and it's clear that Ever-Green really cares about their employees and the satisfaction of their customers. And it shows." We are thrilled to have Jason as our newest addition!

District Energy 101 - A Place to Learn a Little More

District energy was first put into application thousands of years ago with heat sources connecting users in Ancient Rome. There is a system in France that has been in continuous operation since the 14th century.[1] The oldest US system began steam service in 1853 to the US Naval Academy in Annapolis, MD. The first system to serve a city was developed in 1877 for Lockport, NY Many of these early urban systems were established based on the development of electric grids. Steam was a natural by-product of the electricity generation process and early engineers didn't want to see energy go to waste, so this steam was captured and shared with nearby buildings.

1. www.districtenergy.org/history-of-the-district-energy-industry

Steam distribution was the preferred methodology for district energy through the early years of development, since it didn't require the pumping needed for a hot water system and took less engineering at the plant and building level. However, as larger power generating stations were developed and rate structures changed, this low-cost steam from power generation became less available and district systems were largely reinvented as local municipal and campus systems, with some private utilities remaining in place. Over the years, steam systems have remained the majority in the US, however, most of the newly developing district systems are using hot water for distribution in an effort to save energy and water, ideally saving money for the system as a whole. We will cover this topic more in a future article.

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