THE VPU QUARTERLY

a newsletter published by Virginia Public Utilities

April 2021

The office will be closed on the following dates:

April 2nd
May 31st
July 5th

VPU — QUICK NOTES

KNOW THE SMELL OF NATURAL GAS—BE SAFE!

If there is a faint smell of natural gas, call VPU at 218-748-7540.

If in doubt, leave the building immediately & call 9-1-1.

STREET LIGHT OUT?

If you notice a street light that is burnt out or flickering, please call VPU at 748-7540 so that we may get it fixed and keep our streets bright!

Before You Dig,
Contact Gopher State One Call

Dial 8-1-1 or 800-252-1166 or www.gopherstateonecall.org

CHECK YOUR WALL PATCHES

If you have steam heat in your home, or there is active/hot steam in the service line to your home…

Periodically check the wall patch where the steam enters your building for leaks.

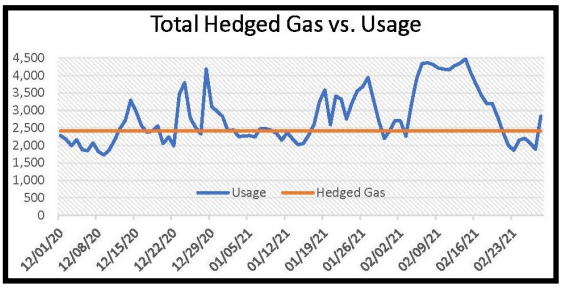
If you have a vacant property please check property often, as damage can occur quickly…

Call 748-7540 with questions.

How VPU Fared in February Cold Snap

When I started here in July of 2005, I was tasked with purchasing the gas for this utility. Admittedly, I had no clue what I was doing. Back then roughly 50% of our winter gas load was purchased with one purchase in late fall when prices made an annual dip. The rest was purchased on the spot market. In mid-September of that first year Katrina hit, wiping out a good amount of offshore natural gas production, and the price, instead of falling to under $7.00/unit, spiked to $14.00. (Note: every 1 unit the Utility buys is 10 units you buy). I learned right away that our customers do not appreciate price spikes, and with that in mind, I developed a hedging program that, over the years, has become very effective at cushioning the ups and downs of the market. But because it is impossible to know how much gas you'll need on any given day, there will always be some amount of gas that needs to be purchased in the spot market and so, exposure to market volatility is unavoidable. The flat line in the graph to the bottom shows the gas we buy well in advance (hedged) – which is 100% of our average usage. The jagged line shows the actual usage. On any given day we are either buying gas on the spot market to fill our gas needs on colder days, or we are putting gas into storage on warmer days.

On Monday, February 8th, the leading edge of a polar vortex reached Minnesota. The average temperature that day was -15 with the low nearing -30. It was the coldest day of the winter – so far. The city-wide natural gas used that day was 4,403 units. Normal summer citywide usage is 200 units. The average price of gas was $4.12 – a bit high but not too bad. By the end of the week the polar vortex had driven well south into Oklahoma, Texas, Arkansas – states that provide a large portion of the gas which flows into the Upper Midwest. By February 12th, it got so cold that natural gas producers could not get their product to market because their gas pipelines had frozen off or power was out. The company that transports gas from there to here was looking at a situation where far more gas was getting taken out of the pipe then was getting put in. That is a recipe for disaster. Circumstances being what they were, the pipeline company called a Critical day for the long weekend of February 13th to the 16th. Without going into a lot of detail, there has been only one Critical day called in the 15 years I've been here, and this was the beginning of a string of six such Critical days called. Gas buyers scrambled to get gas, driving prices through the roof. Anyone buying spot gas that day was hit, and hit hard, with prices at $230/unit, nearly 75 times the normal winter price of $3/unit. The average price of gas on those Critical days was $26/unit, and yet, these purchases had to be made. Were it not for an 1,800 units/day gas purchase at $10/unit executed two days earlier, we would have been in that market for 2,300 units, nearly 50% of our usage. That purchase saved the Utility $1.2 million and left the Utility in the spot market for only 500 units – roughly 11% of total usage. The excess costs incurred to purchase this spot market gas was just short of $600,000. Most other gas utilities were not so lucky.



In conversations with other utilities, we have learned that others hedge from 40% to 80% of their average daily usage. These utilities were in the spot market for upwards of 70-80% of their load for those days, and as a result, they got hit hard. To get an idea of the impact, the average residential customer usage in February was 216 units (21.6 of the units I've been using above). At typical rates, those 216 units would cost $170. This year they would have cost $311, an increase of $141. Other utilities have reported the impact to their average residential customer to be an increase of $250-$400. The good news is that the Utility has the assets to absorb this gas price spike and so the Commission, at its March 22nd meeting, decided to not pass those costs through to the customer.

Silver Lake—Past, Present & Future

Often I walk to work from my home on Northside. I weave my way along the two city lakes. It's generally a pleasant park-like walk interrupted by a few pop cans and plastic bags. I watch the lakes and the life that they support go in and out of their own seasons. This winter there were two notable observations. The first, on a January day that I happened to be driving to work, there stood a red jacketed ice fisherman far out on the ice, and the lake was half open. My first thought was, the County Rescue Team is going to get some practice today. Thank God that wasn't the case, but I do believe we'll be seeing more of that in the not too distant future. The second surprise was that by late February, the lake almost completely froze over this year. Two things brought this about. The first, of course, was the polar vortex which swept bone-chilling temps thru the midsection of the country, and the second was the Utility's significant reduction in power generation.

In the early 1950's, new electric innovations such as the electric stove, improved electric lighting, and electric water heating, brought about unprecedented growth in demand for electricity. The Utility installed its first water cooled turbine generator to meet the City's increased power load and to provide steam for a sprawling residential steam district. In a water cooled turbine generator, water is pulled in from the lake and circulated once through a set of cooling tubes on the low pressure end of the turbine. This condenses the steam, creating a vacuum which, in turn, draws incoming steam through the turbine, allowing it to operate more efficiently. This once-through pass of lake water raises the temperature of the water roughly ten degrees from entry to discharge. This smaller turbine's low volume of cooling caused only the southeast corner of the lake to remain open year round. I lived a half block away from the lake as a young child in the late 60's, and I remember the gaggle of ducks gathering in the open water. Continued growth in electric use resulted in the installation of our #6 turbine generator, which also used once-through water cooling. From that point on the lake has remained largely open throughout the winter months. This past winter, however, the plant operation configuration reverted back to a similar configuration as was used in the 50's. Our small #5 turbine generated a few mega-watts of electricity as standby in case we experienced continued problems with our 306 MP feed (see article from last quarter). By mid February, we had addressed the 306 issues, and so we took the turbine off line on February 16th. As the Utility moves into a new era, we do not foresee the use of water cooled turbine generation, and so it is entirely likely that the lake will, for the first time in 70 years, completely freeze over in winter 2021-22, and the guy with the red jacket will be able to set up his ice house wherever he pleases.

Steam Conversion Update

The Northside Steam Conversion is moving along quickly. As of mid March just over 200 customers remain to convert. Last year, on Southside, that 200 mark was not reached until late July. Since January we have been calling each customer to inquire on their progress and we are seeing an uptick in conversion activity as many contractors are starting to get busy. I can't stress this enough: the deadline for conversion on the Northside is October 31st, 2021.

The steam will be turned off on November 1st. Don't be left out in the cold.