



# THE VPU QUARTERLY

a newsletter published by Virginia Public Utilities

## July 2021

**The office will be closed on the following date:**

September 6th

### 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](http://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.

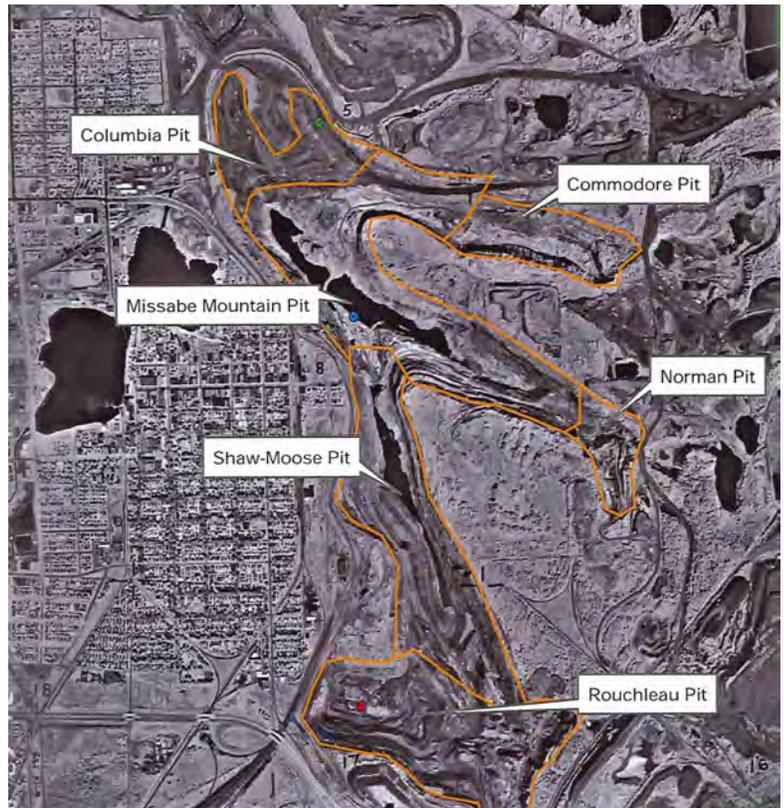
If you have a vacant property please check property often, as damage can occur quickly...

Call 748-7540 with questions.

### An Update on VPU's Water Supply

Now that the dewatering of the Rouchleau Pit has become more and more noticeable, we thought it appropriate to revisit the topic of our water source, which we originally addressed in a July 2018 newsletter article.

Over the past few years, many have had questions regarding the stability of our water source due to the renewal of mining efforts on the south end of the series of mines on the east side of our town. The picture below, provided by Northeast Technical Services, is an aerial view of the pits in 1972. Water levels have come up substantially since then. In this picture, the waters shown in the Missabe Mountain Pit (our drinking water source) are roughly at the 1,117' level of our current intake structure (the blue dot) while the Rouchleau Pit is completely dewatered some 135' deeper. Given what is known about the structure of these pits, as dewatering progresses, the water level of the Missabe Pit, which was at roughly 1,300' before dewatering began, is expected to drop to roughly 1,215', being retained by massive amounts of low permeability rock that exists between the Missabe Mountain Pit and the Rouchleau Pit. This level is roughly 100' above our current drinking water intake structure located at 1,117', and 215' above the old intake structure, which the Utility could fall back to if necessary. We at the Utility, along with Northeast Technical Services, Minnesota DNR Waters, and United Taconite, are confident our City's water source is safe and secure.



### Not Converted Yet? – READ THIS!!

Gas Application Deadline has Passed

- Get gas app in before our contractor leaves town (early July)

Steam is off November 1, 2021

- HVAC Contractors are getting booked up

**ACT NOW – or you'll be out in the cold come November**

## The Future of Power Reliability

What is it that makes electric power reliable? Reliable power is reliable because however much of it you want is available when you want it. We have grown accustomed to flipping a switch and having the light turn on. Nothing is more effective at highlighting our preference for reliable power than a power outage.

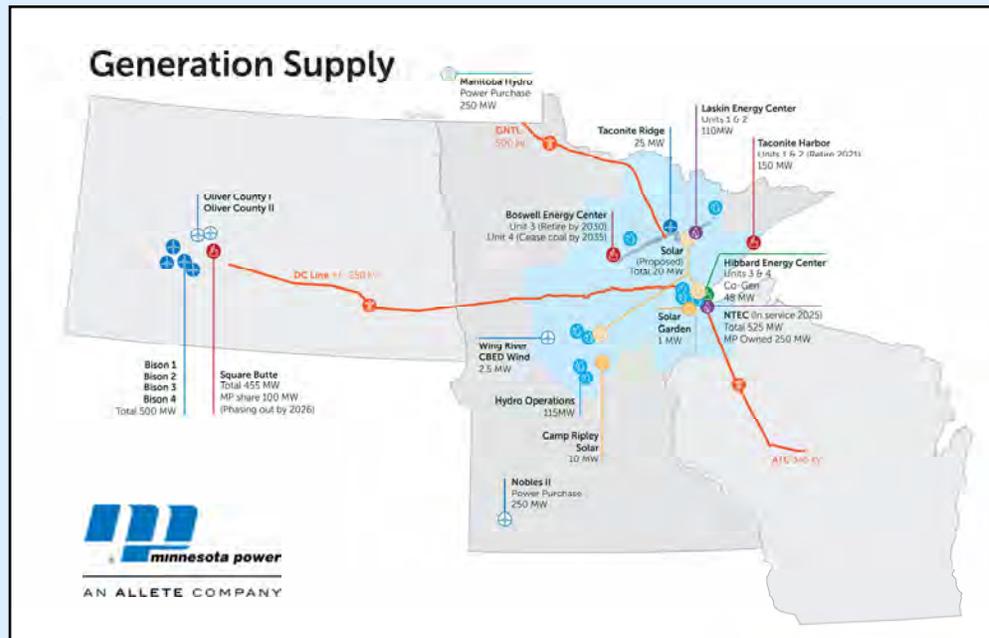
Power plants create short-term reliability 1) by having a power source that can provide power all day, every day, 2) by having a redundant power source or sources ready on a moment's notice should a problem occur and, 3) by having that power generation close to the customer to reduce transmission problems. In short, local redundant baseload power = reliable power. When less baseload power generation is available, our energy supply is less reliable. Coal, natural gas, biomass, nuclear, and, to a lesser extent, hydro power are baseload power sources. Wind and solar are not baseload because they cannot be relied upon on a moment's notice to generate power.

Furthermore, the further the power source is from the customer the more it is subject to risk from bad actors, storm related damage, negligence, etc. making our power supply more vulnerable to transmission problems and thus less reliable.

For a case study on the impact on customers of these renewable mandates we need not look any further than our own local power provider's, Minnesota Power (MP), response to the 2007 "25 in 25" mandate, which required 25% of power generation capacity be from renewable facilities by 2025. This is not to be critical of MP, it is to illustrate a point. Since 2007 MP has retired or has plans to retire 750 MW of coal baseload power and has replaced it with 250 MW of natural gas baseload power, and 250 MW of baseload hydropower. . . A net reduction of 250 MW of baseload power. Half (250 MW) of the new baseload power is located outside MP territory (in Manitoba), requiring the construction of 100's of miles of transmission lines. Conclusion: Less baseload energy and more power lines equates to MP's generation fleet being less reliable than it once was. In addition, if the Boswell 3 & 4 generators are shuttered, as is anticipated in this political environment, matters will only get worse. Decreased reliability is an intangible cost customers will ultimately have to pay.

Now the tangible costs: Our price of power in 2007 averaged \$.08/kwh. This year it is nearing \$.12/kwh. We purchase our power on a wholesale contract from MP. By 2014 MP's recovery of investment in power generation assets – the largest cost component – more than doubled. There was roughly a 300% increase in MISO costs – these are costs for strengthening the overall grid. With the influx of renewable power, ever increasing quantities of power now need to be transported from remotely located sources to the big city end user. Fuel costs remained generally flat over that time period. In short, these cost increases are the result of the "25 in 25" mandate.

"25 in 25" is one thing, but President Biden's Energy Plan calls for 100% carbon free energy by 2035. To achieve that goal while maintaining reliability, the carbon free baseload options of nuclear and hydro power have to be available. However, both of these power sources have been vigorously opposed by environmental groups and their political allies. It seems there is this notion that all that is necessary to make wind and solar reliable is to simply hook them up to a battery. That's partially true, but for wind turbines that would mean a battery big enough to hold an additional two to three days of power. The reality is that wind power produces at 30-50% of its total capacity over time, depending on where the wind turbine is located; so for MP to replace the 250 MWs of baseload power that it lost in the above discussion with a wind turbine/battery set, it would have to install roughly 500 - 800 MWs of wind generation with battery storage capacity to store, on average, nearly two days of power for use when the wind isn't blowing. That's a lot of batteries, and a lot of money which customers will ultimately pay, never mind the environmental impact of the chemicals required to make these batteries. Wind and sun may be inexpensive fuel sources, but the tools to capture them are not.



President Biden's Energy plan also calls for a shift toward electric heating and electric vehicles. "Electrify Everything" is the current buzz phrase. The country's electric generation capabilities would have to more than double to achieve that goal, and if it must be done on wind and solar alone, it will require substantial advances in battery technology.