

Subject: Lessons of the Big Freeze

January 3, 2023

After difficult events, it's wise to review and reflect. Case in point, "the big freeze," just before Christmas. Highlands hasn't had extreme below-0 temperatures in over a decade.

Visitors are now in Highlands year-round. The full parking on Main Street in December underscores that shift. Our peak electric and water usage is no longer around July 4th, or October, it occurs around Christmas. Many people were in Highlands during the holiday when maximum power demand and water usage occurred.

Our seasonal residents used to winterize their houses before leaving in late fall while never returning until spring. Our tourist season ended after Halloween, so the only people in town were a small cadre of locals who were accustomed to brutal winters.

Second homeowners now tend to come and go year-round, therefore the house winterizing ritual has declined. Many new homeowners had never experienced a subzero cycle. At 4,118 feet high winds, snow, and heavy summer rains are expected, but sustained temperatures at 7 or 9 below zero were not. The full water lines in unoccupied houses where thermostats were set very low to save energy was a widespread practice. On the other hand, occupied houses had thermostats turned up high to counter the subzero temperatures that pushed demand.

Highlands struggled to keep the power grid operative. Our electric crews did a magnificent job of managing loads in extreme temperatures and high winds to keep the power connected, all amid the Duke Energy rolling blackouts, and never before demand loads.

This high statewide demand underscores Duke's generating capacity challenges. An impending grid upgrade goes hand in hand with increases in generation capacity. The Highlands electric system will have to make similar upgrades. This cold event underscored the need to improve our electric grid to carry much higher loads.

The town will have to enter a new wholesale electric contract in the next five years. We will expect the new provider, whomever it may be, to of course provide ample and reliable power. When the Highlands hydroelectric plant was built in 1929, Highlands could generate on a good day about 1 megawatt. This past month the town was knocking at the door of using 15 megawatts. A decade from now that number will be even higher.

As electric vehicles increase, there will be an increased need for electricity and an upgraded grid. Duke and other energy suppliers will have to significantly expand generation capacity. With concerns for climate change, I believe nuclear power generation has to be reconsidered as one piece of the emerging energy puzzle. Research suggests that small, safe nuclear package plants might be a game changer in meeting our insatiable demand for electric power.

The second outcome of "the big chill" is that the Town of Highlands and its residents will have to continue to maintain the water system. Maintenance will have to be done at the provider and user ends.

On Tuesday morning after the freeze, water plant operators could not fill town water tanks. It wasn't because operators were unable to produce water, the problem was the unoccupied homes that had frozen waterlines were gushing water. The computer system that monitors tank levels began reporting alarming water loss data. Fortunately, folks in neighborhoods called into town hall to report homes where there was evidence of major leaks. Our crews worked long hours turning off water service at the meters of affected homes. Many residences and businesses will now need to make sure their water systems are upgraded to handle these super-cold events. The town will be working on a system to better locate leaks.

Highlands has a long history of uncertain and extreme weather. But, for certain we have a town utility staff that will always do everything possible to keep the town up and running. We should all be grateful for their dedication and service.