MESSAGE FROM GENERAL MANAGER AND CEO

JERRY D. WILLIAMS

More about the Texas Grid

LAST MONTH WE discussed an all-time winter peak of about 71,000MW of load that was expected for the week of February 14, 2021. As predicted, in the early hours of Monday February 15 the electric load did exceed 71,000MW. Unfortunately, having that much load was not the biggest problem. Summer peak load is usually more than 71,000MW. The basic problem (rolling blackouts) was not the big load. The problem was "what caused" the big load.

By the time you read this, you have likely heard a lot of finger pointing about whom or what is to blame. My suggestion is to pray about the issue before we start assigning blame. There is only one person in charge of the weather, and He does not always respond as we want when He is blamed. If you want to know why the weather changes, read Genesis 8:22.

Generally speaking, we all build our lives around the weather that is expected. Of course, it has snowed in Houston and there has been ice in South Texas; but after 20 or even 100 years or so, we forget. We don't insulate our swimming pool equipment. Instead we run the pump 24/7 to keep it from freezing. We leave faucets dripping rather than install freeze proof faucets, etc. The point is that none of us actually go to the expense of preparing for a winter event that may occur every 50 years.

We prepare for expected normal cold weather. That is exactly why some natural gas facilities froze up, and why some power plants had pipes freeze and air intake vents cover over in ice. An unnecessary feed water sensor got cold and tripped a nuclear power plant. Frozen coal could not be ground to a powder to fire boilers at coal generating plants.

For three days, conservation and rolling blackouts reduced the load to close to 50,000MW because over 20,000MW of generation was unexpectedly shut down. When the weather got better after 3 days, the generators started returning to the grid. Utility Scale battery storage is basically still being developed, so that leaves the electric grid with the need to instantaneously provide the electricity needed at the exact same time the electricity is used.

An often overlooked fact is that all the electricity

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in North America operates on 60 cycles. That means every electric generator connected to the grid is rotating in multiples of 60. That is 60 revolutions per second or even 3,600 revolutions per minute, but all in multiples of 60. The instant the load is greater than the available power on the grid; the result is the cycles slow down. Even a reduction to 59.91 cycles is considered a problem that must be corrected immediately. If the cycles are allowed to go as low as 59, electronic equipment everywhere will begin to burn up. This could be a major disaster that makes the rolling blackouts look minor. The cycle is important enough that every utility in Texas have electronic relays installed in our substations (including Lamar Electric) that will automatically open if the cycles ever drop to 58.5. If these relays open, over 25% of all electricity in the state will automatically go off at the same time, and they will stay off. Of course, virtually every generator would also go into shut down mode. If this ever happens, you can expect the entire state to be blacked out for several days. On the morning of February 15, we were within a few minutes of this very thing happening.

Yes, I am sure there is some more winterization that can be done at Texas generating power plants, but you can be sure it will cost money. Friends of mine could not get their diesel powered pickups to start because they had not added the right additive or did not leave the pickup running all day and night. Were they wrong to not add the additive or leave the truck running? Most would say it was a money saving choice. Often power plant owners make choices for the same reason. Of course we all know the consequences of no electricity are not a good comparison to a truck not starting, but it illustrates the point that all of us could do more winterization. One thing is certain: if we continue to shut down coal, nuclear & natural gas generators and build more wind & solar farms, the likelihood of a catastrophic event is increased.

Primarily due to the massive federal subsidies paid to wind and solar, you can expect a lot more wind and solar farms. These subsidies are probably going to continue for a long time. They were to have expired many times, but the folks in Washington DC keep extending them.

There is not one single person, organization, political party, company, environmental group, type of fuel or type of generator that is responsible for the rolling blackouts. A nuke plant tripped off, lots of wind turbines froze, natural gas generators pipes froze, natural gas infrastructure froze up, coal froze up, solar farms were snowed under, natural gas pipeline pressure went too low and neighboring electric grids had blackouts and could not help even if there had been lots of transmission lines to other states.

The natural gas industry is required to give priority to residential service. If the natural gas to residences goes off, the process of turning it back on is difficult and involves lighting a lot of individual pilot lights. This priority is good, but it creates a situation where power plants that use natural gas may not have enough pressure or volume to operate. Most folks that heat with gas did not lose gas service, but they had no electricity to distribute the heat in the house. This will not be an easy fix.

Sure, the electric generators will be better prepared for next winter. No, the winterization methods used for power generators in Minnesota will not be used in Texas because it gets too hot in Texas. The electric power industry can learn a lot from the Texas winter storm, but we need to make sure and not over react and unnecessarily drive up the price of electricity in Texas, because that also has consequences for all of us. ■

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Use Generators Safely When RV Camping

FAMILY VACATIONS THIS YEAR might mean camping to avoid crowds and public spaces. RV camping provides a home away from home where you can feel cozy and safe from coronavirus exposure. But if you use a portable generator for lights, TV or heat in your RV, it's important that you remember to take safety precautions against carbon monoxide poisoning, including these recommendations:

Take a carbon monoxide detector. Mount it inside the vehicle and make sure it works.

Inspect your RV's chassis and generator exhaust system regularly, at least before each outing and after incidents that could cause damage.

Inspect the RV for openings in the floor or sidewalls. If you find a hole, seal it with a silicone adhesive or have it repaired before using your generator again.

Inspect windows, door seals and weatherstripping to ensure that they seal properly.

Do not operate your generator if the exhaust system is damaged or if it makes strange sounds.

Park your RV so that exhaust can easily dissipate away from the vehicle. Do not park next to tall grass or weeds, buildings, or other obstructions that might prevent exhaust gases from wafting away.

When stopping at rest stops, be aware of other vehicles around you, such as semitrucks, which may have their engines and generators running.

Do not sleep with the generator operating.

Leave a roof vent open when the generator is running, even during cooler weather.

If you do not feel well, do not be fooled into thinking that it's because you have been driving too long, you ate too much or you are suffering from motion sickness. Shut off the generator and step outside for some fresh air, just to be sure.

If you fear that you're experiencing carbon monoxide poisoning, stop driving, get to fresh air immediately and seek medical attention. ■

DID YOU KNOW?

May is National Electrical Safety Month. Time to inspect your home for any lamps, appliances, electronics, cords, plugs or outlets that need repair or replacement to prevent hazards.

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POWER TIP

Avoid putting heat-producing electronics near your home's thermostat during the cooling season. Heat from a lamp can raise the temperature, causing the air conditioning to turn on more often.

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Be sure to follow safety precautions for all the electric appliances in today's kitchens.

Remember Electrical Safety This Month

MAY'S DESIGNATION AS National Electrical Safety Month makes it a good time to review electrical hazards and think about how to keep common household dangers at bay.

Each year, electrical malfunctions account for 35,000 home fires causing more than 1,130 injuries, 500 deaths and $1.4 billion in property damage, according to Electrical Safety Foundation International. Because the average American home was built in 1977, many can't keep up with the demands of today's appliances and devices.

To help prevent adding to the sobering statistics about electrical dangers, watch for the warning signs of an overloaded electrical system, which include:

- Frequent circuit breaker trips or blown fuses.
- Lights dimming when other devices are turned on.
- Buzzing sounds from switches.
- Discolored outlets.
- Appliances that seem underpowered.

To maintain an electrically safe home, be sure that the following safety devices are installed according to updated codes:

- Arc-fault circuit interrupters protect against electrical fires caused by malfunctions.
- Surge protective devices safeguard against surges that can damage or reduce the life spans of electrical systems and devices.
- Ground-fault circuit interrupters protect against electric shock.
- Tamper-resistant receptacles have an internal shutter system to prevent foreign objects from being inserted into an outlet.

About 3,300 home fires are started by extension cords every year, so it's important to follow these safety tips:

- Don't substitute extension cords for permanent wiring.
- Don't run cords through walls, doorways, ceilings or floors. If a cord is covered, heat cannot escape, which is a fire hazard.
- Don't use an extension cord for more than one appliance.
- Make sure the extension cord or temporary power strip you use is rated for the products it powers and is marked for either indoor or outdoor use.
- Don't use a cord that has a lower power rating than the appliance or tool you are plugging in.
- Never use a cord that feels hot or is damaged in any way.
- Ensure your extension cord has a polarized or three-prong plug, which should only be used with a three-slot outlet.