



# What is GRID RESILIENCY?

**R**esiliency of the grid is one of the most popular concepts being talked about in the electric industry today. This concept recently made headlines in the wake of Hurricanes Irma and Maria, which caused extraordinary damage to Puerto Rico's electric grid, resulting in the longest sustained outage in U.S. history. Lack of resilience became the go-to phrase to describe Puerto Rico's grid. Here in Wisconsin, what does grid resiliency mean for you?

Resiliency is many things—it's reliability in your electric service, it's our ability to efficiently restore your power, it's being able to meet the demands of new technology, and it's how we serve you with various generation sources without skipping a beat. Ultimately, resilience is how we deliver on our promise to improve the quality of life for our member-owners.

When it comes to having a resilient electric grid, it begins with a system that is designed and built to withstand high winds, powerful storms, cybersecurity threats, and other disruptions that could result in outages. A resilient grid is also flexible and adaptable by allowing different types of generation—such as wind, solar, coal, and hydro—to seamlessly work together to provide you with safe and reliable power. The way our systems react to advancements in technology—from demand response investments to serving the needs of electric vehicles—all factor into the resilience of our grid.

Resiliency is a 24/7, 365-days-a-year task. Whether it's the power lines, substations, or generation facilities on our grid, it takes proactive maintenance and investment to keep them running smoothly. With thousands of consumers without power for months, the lack of resiliency in Puerto Rico's power grid wasn't solely caused by hurricane damage; it was the result of years of neglect in taking care of their system and preparing for a worst-case scenario.

In a similar way to how we maintain our vehicles with regular oil changes, inspections, and tire rotations, a grid must also be properly maintained. Throughout the year, we regularly conduct pole and line inspections. Our goal is to find a problem before it becomes one. For example, if we find a weak pole that has damage from termites, we replace that pole. Doing so ensures that pole is as strong—or as resilient—as it can be.

Living in Wisconsin, we know that significant power



outages can occur, especially as we enter the summer storm season. Whether we're at the mercy of thunderstorms, flooding, or even tornados, we have confidence in the resiliency of our system to recover from the situation with as little disruption as possible.

In the dictionary, resilience is defined as “the ability to bounce back, recover quickly and go back into shape or position after being stretched.” When it comes to providing our member-owners with resilient service, this is what we work toward—day in and day out!

## The Power Behind Your Power

As we approach the middle of summer, it brings with it thunderstorms that can be quite powerful and can inherently include power outages. While Richland Electric Cooperative (REC) strives to provide reliable electricity to our members, there are times when Mother Nature has other plans. Most of us can ride out a storm from the comfort and convenience of our homes. However, there is a group of professionals that springs into action when the weather takes a turn for the worst—co-op lineworkers.

Braving stormy weather and other challenging conditions, lineworkers often must climb 40 or more feet in the air, carrying heavy equipment to restore power. Listed as one of the 10 most dangerous jobs in the United States, lineworkers must perform detailed tasks next to high-voltage power lines. To help keep them safe, lineworkers wear specialized protective clothing and equipment at all times when on the job. This includes special fire-resistant clothing that will self-extinguish,

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limiting potential injuries from burns and sparks. Insulated and rubber gloves are worn in tandem to protect them from electrical shock. While the gear performs a critical function, it also adds additional weight and bulk, making the job more complex.

In addition to the highly visible tasks lineworkers perform, their job today goes far beyond climbing to the top of a pole to repair a wire. They are also information experts that can pinpoint an outage from miles away and restore power remotely. Line crews use their laptops and cell phones to map outages, take pictures of the work they have done, and troubleshoot problems. In our community, REC lineworkers are responsible for keeping 987 miles of lines across four counties working, in order to bring power to your home and

our local community 24/7, regardless of the weather, holidays, or personal considerations.

While some of the tools that lineworkers use have changed over the years, namely the use of technology, the dedication to the job has not. Being a lineworker is not a glamorous profession. At its essence, it is inherently dangerous, requiring work near high-voltage lines in the worst of conditions, at any times of the day or night. During hurricanes, wildfires, or storms, crews often work around the clock to restore power. We are thankful to the seven REC lineworkers but also thankful to the countless lineworkers throughout the country.

Let them know you appreciate the hard work they do to keep the lights on, regardless of the conditions. 🇺🇸

# Powering up after an outage

When the power goes out, we expect it to be restored within a few hours. But when a major storm or natural disaster causes widespread damage, extended outages may result. Our line crews work long, hard hours to restore service safely to the greatest number of consumers in the shortest time possible. Here's what's going on if you find yourself in the dark:

## 1. High-Voltage Transmission Lines:

Transmission towers and cables that supply power to transmission substations (and thousands of members) rarely fail. But when damaged, these facilities must be repaired before other parts of the system can operate.

## 2. Distribution Substation:

A substation can serve hundreds or thousands of consumers. When a major outage occurs, line crews inspect substations to determine if problems stem from transmission lines feeding into the substation, the substation itself or if problems exist further down the line.

## 3. Main Distribution Lines:

If the problem cannot be isolated at a distribution substation, distribution lines are checked. These lines carry power to large groups of consumers in communities or housing developments.

## 4. Tap Lines:

If local outages persist, supply lines (also known as tap lines) are inspected. These lines deliver power to transformers, either mounted on poles or placed on pads for underground service, outside businesses, schools and homes.

## 5. Individual Homes:

If your home remains without power, the service line between a transformer and your residence may need to be repaired. Always call to report an outage to help line crews isolate local issue.



# A SUMMER MORNING ON THE FARM

**When I was a kid, a June day began shortly after 5 a.m.**

**when my dad called up the stairs for me to get up. No need to light a lantern to take to the barn, as at this hour the sun was just peaking above Macijeske's farm to the east.**

Together with our farm dog, Fanny, I made my way up the long lane that led from the barnyard to the night pasture. As I walked along, I heard a meadowlark calling, and sometimes I spotted a bluebird that had made a nest in a wooden fence post. Heavy dew hung on the grass, and I spotted a spiderweb that was covered with dewdrops—a piece of high-order artwork.

I walked slowly, listening, looking, feeling the dampness of the early morning and the cool breeze sweeping over the land. My mind wandered. I thought of the hay that Pa had cut with the horses and the McCormick mower and that must be bunched and hauled into the barn. I thought of the possibility of going fishing, but knew it won't happen until a rainy day came along.

I arrived at the night pasture, where most of the milk cows, about 15 of them, were lying down and the 10 or 12 young stock were milling about, eating grass. Fanny walked from cow to cow, barking a little, making sure each cow was up and starting home for the morning milking. She "talked" to the boss cow first, the one who always led the herd down the lane, the cow that was in charge. How the boss cow was selected was always a mystery to me, not overshadowed by the way Fanny was able to communicate with the cows, especially the boss cow. What they talked about I will never know, but what I know for sure is that they talked to each other.

Soon the long string of milk cows and youngstock, walking in single file with the boss cow at the lead, were

walking along the lane. A little cloud of dust hung in the air above the herd as they walked along, not hurrying, just ambling. Perhaps enjoying the early morning as much as I did.

Pa opened the barn door when the cattle arrived. The milk cows filed into the barn, taking the exact same stall every time. The youngstock stayed in the barnyard, where they gathered around the stock tank for water. While I have been fetching the cows Pa had been distributing ground feed—corn and oats with some protein mix added—in front of each cow. The amount he gave each cow was dependent on how much milk she gave or if she happened to be dry, waiting for the next calf to be born.

When the milking was finished—it usually took about an hour—the cattle were turned out once more and gathered in the barnyard. They would spend the day in a lush pasture just south of the barn. Pa and I went into the house for breakfast. With my two younger brothers, we talked about the hay crop that awaited us.



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