A Proactive Approach to Storm Preparation

While there is no certain way to prepare for a storm, having a plan of action can help in mitigating a potential crisis. No one knows this better than Southwire's Storm Team, a team that tirelessly works year-round with utilities and partners to track and anticipate the impact of extreme weather events. But even with all the forecasting tools available, it's still very difficult to predict the level of impact these storms will have on power supply.

Hurricanes are extremely dangerous due to their unpredictable nature - often causing unparalleled damage to homes, businesses, and infrastructure. Extremely strong winds and flying debris often sever power lines leaving people without electricity for days, sometimes weeks. Other elements, such as flooding and tornadoes, can also thwart disaster relief efforts by making it hard to deploy the appropriate resources to jump-start the recovery process.

Such was the case in late 2017 when Southwire's team was put to the test after hurricanes Harvey and Irma made landfall. When Hurricane Harvey hit the metropolitan area of Houston, TX, there was no way to make a proper assessment of the extent of damages inflicted due to the unprecedented amount of flooding. Utilities had to wait for the flood water to subside before being able to make a proper assessment of the damage to both overhead and underground power lines.

Likewise, Hurricane Irma demonstrated the unpredictable nature of storms. Florida utility companies, despite being accustomed to planning for hurricanes, still faced the challenge of forecasting the path of the storm. The changing path predictions made it difficult to determine which areas would be in the greatest need of necessary resources.

Hurricanes are not alone when it comes to impacting power supply; winter storms can be just as problematic. Like their counterparts, winter storms bring high winds, freezing rain, ice, and snow - increasing the sag and load on towers which can lead to fallen poles, downed lines, and prolonged power outages.

> "Max Storm is extremely rugged and will save utilities on downtime and repair costs following a major storm event"

In March of 2018, the Mid-Atlantic, Northeast, and New England regions were hit by four nor'easters in less than three weeks. Winter Storm Riley left more than 2 million people without power, knocking down trees and power lines in its wake.

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A Proactive Approach to Storm Preparation

While heroic efforts to mitigate the impact of these storms is imperative during the storm recovery cycle, they're also costly and time-intensive for all parties involved. In the case of hurricanes Harvey and Irma, for example, Southwire committed four plants to produce the necessary cables to respond. But preparing for an extreme weather event takes more than having a team in place ready to dive-in at a moment's notice. It also involves thinking of effective ways to harden infrastructure **before** a weather event occurs.

Southwire's Max Storm™ overhead conductor is the company's latest innovation. It's a proactive approach to storm preparation and works by hardening power lines in areas vulnerable to high winds and ice. Because of its smaller size in comparison to other ACSR conductors, Max Storm™ overhead conductors can withstand the demands of extreme weather conditions. Created with mischmetal alloy coating and an ultra-high-strength steel core, Max Storm™ overhead conductors provide minimum elongation during extreme load events, which facilitates maintaining safe electrical clearances even during these events.

"Max Storm™ overhead conductor is extremely rugged and will save utilities on downtime and repair costs following a major storm event," said Paul Springer, Southwire's Director of Overhead Transmission Engineering. In addition to being able to endure extreme heat, ice, and wind load, Max Storm™ overhead conductors also provide corrosion protection.

"We pride ourselves in helping our communities and giving back in times of need, but we also understand the importance of taking a proactive approach to dealing with weather-related disasters. Max Storm™ overhead conductor is the answer to helping our communities bounce back when these events occur," said Springer. Southwire is continuously pioneering ways to bring efficient and sustainable solutions to the customers and the communities they serve.

Let Southwire help you "Stand Against the Storm."
Vist our site to learn more about Southwire's Storm Team

LEARN MORE

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Max Storm™ Overhead Conductors

Standing Against the Storm

Conductors designed for mechanical ruggedness to survive extreme ice loadings and extreme wind events. Designing conductors to withstand heavy ice and wind loads has always been a requirement, but, with extreme weather conditions wreaking havoc across the world, extreme weather conditions are a growing concern for utilities.

In areas such as the extreme north, coastal regions, and water crossings, ice buildup can exceed 1" in thickness. These conditions cause extreme strain on transmission lines resulting in increased sag and tension. To accommodate for the increased sag, transmission towers must be built taller to ensure a safe electrical clearance is maintained between grounded objects and conductors. Taller towers mean higher costs to utilities.

Extreme wind conditions, such as tornadoes and hurricanes, also cause tremendous strain on transmission lines. In recent years, hurricanes, such as Katrina and Maria, have highlighted the humanitarian crises that prolonged power outages can cause and have prompted utilities to put a more intense focus on grid resiliency, which is a combination of storm hardening and better recovery planning.

Southwire's Max Storm™ overhead conductors are utilities' answer to extreme weather conditions. At half the size of the same capacity ACSR conductors, Max Storm™ overhead conductors accumulate less ice buildup, resulting in less sag and less weight on transmission towers. The higher aluminum packing factor reduces the sail area which results in less wind load on transmission lines. Made with high-temperature-tolerant ZTAL aluminum zirconium alloy, an ultra-high strength (UHS) steel core, and mischmetal alloy coating, these conductors are able to withstand higher stringing tensions, extreme heat, and provide the best available corrosion protection. The UHS steel core and strong aluminum alloy result in minimum elongation during extreme load events. This allows for increased electrical clearances and greater safety margins.

Benefits:

Thermal Ratings: 210˚C continuous and 240˚C emergency allows for greater capacity than standard ACSR.

Smaller Conductor Size: Max Storm™ overhead conductors are half the size of the same capacity ACSR conductors, resulting in less ice buildup, less sag, and less weight on the towers. The higher aluminum packing factor reduces the sail area for reduced wind load

Same Repair Hardware as ACSS: ACSS hardware and fittings are used for the Max Storm™ overhead conductor.

Reduced Tower Height: Tower height and cost can be reduced as a result of Max Storm™ overhead conductors carrying less ice weight or wind load, having less conductor tension, and less load sag than traditional overhead conductors.

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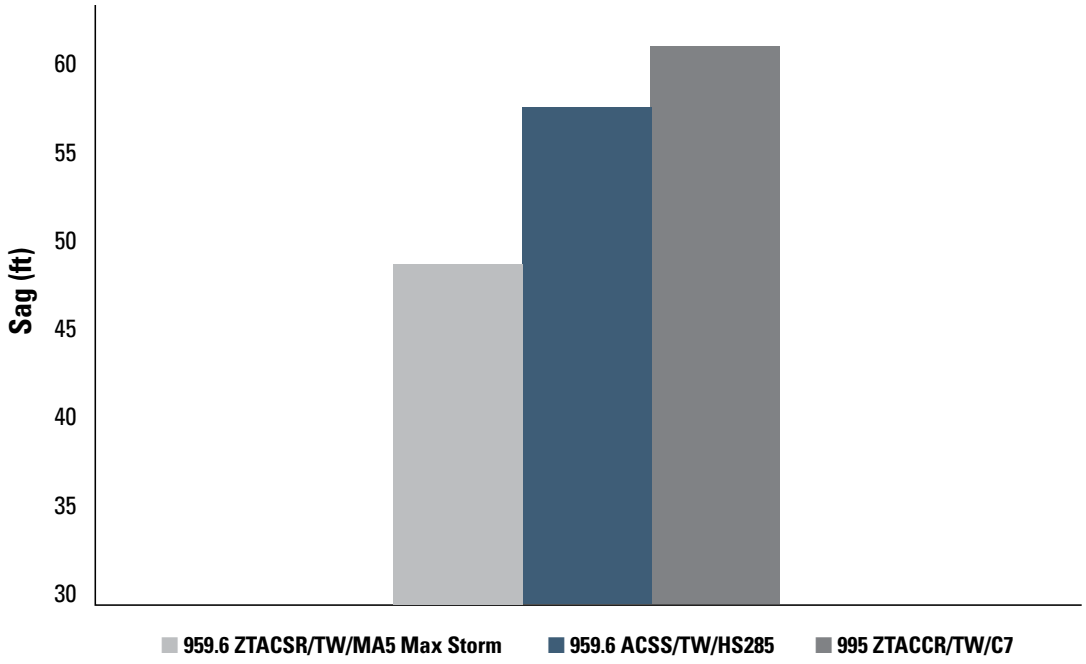
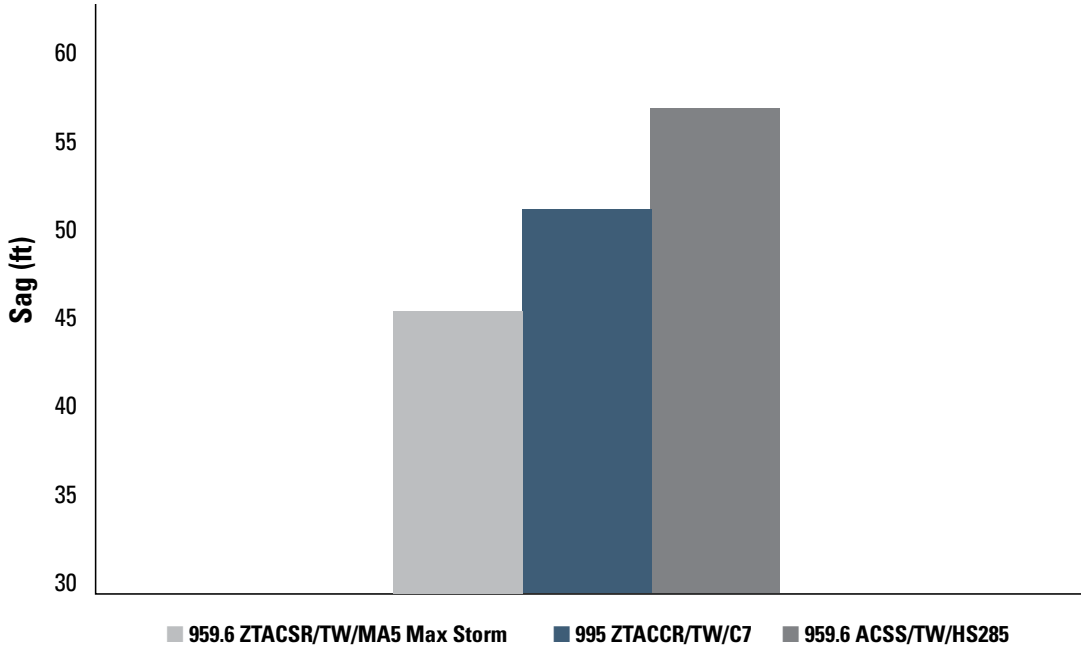
Sag Comparison Under NESC +2" Heavy Ice Load – 1200 ft Span



Calculations based upon:

1200 ft span
NESC "Heavy" loading district
40 °C ambient, 2 ft/sec wind
30 deg N lat
0.5 emissivity and absorptivity
June 11, noon
2012 NESC
Southwire Certified Data (where applicable)

Blow-out Comparison Under 300 MPH Wind Loads – 800 ft Span



Calculations based upon:

800 ft span
NESC "Light" loading district plus Hurricane wind at 60 °F
2012 NESC tension limits plus 80% RBS @ hurricane wind
Southwire Certified Data (where applicable)

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