

Storm Restoration



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Overview

- Storms
 - How we prepare
 - How we react
 - How we restore
- Restoration Activities
- Restoration Resources
- Recent storm restorations



What causes storm related outages?

High wind gusts or sustained winds

- Trees and limbs blowing into or falling onto Ameren overhead lines
- Blowing debris
- Tornadoes

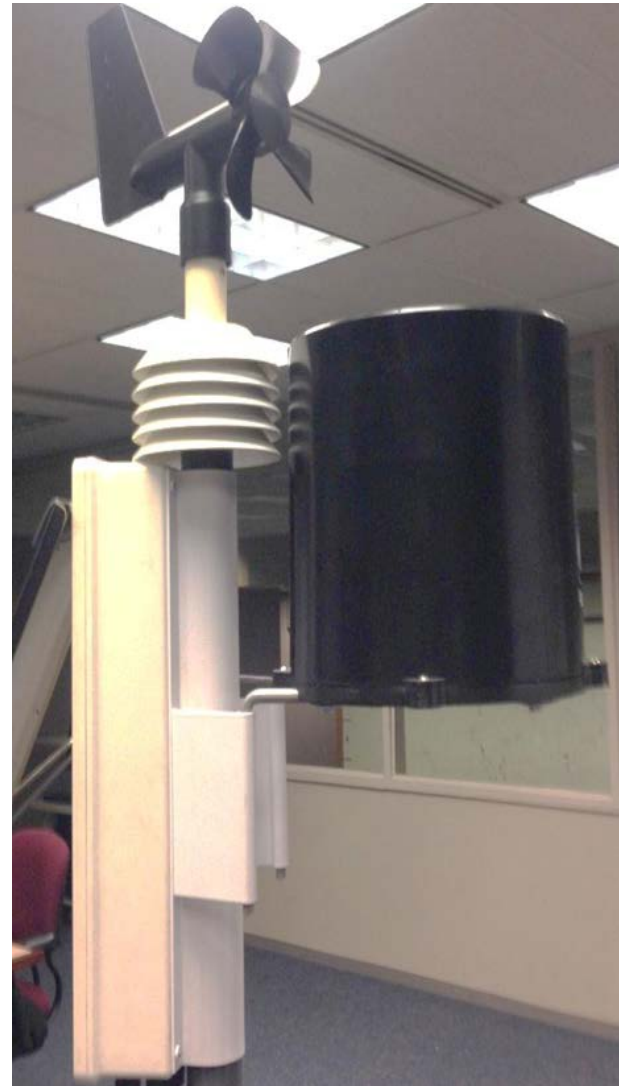


Ice and snow

- Heavy ice or snow accumulating on power lines causing overload from weight
- Trees becoming heavy with ice and snow and falling into overhead power lines

How we prepare

- Continuous storm training
- Quantum Weather
- Weather Monitoring
- Pre-event notifications and stand-by



How we react



- Activate the Emergency Operations Center (EOC)
- Call co-workers to respond
- Assess number and types of outages
- Identify system damage
- Identify hardest hit areas

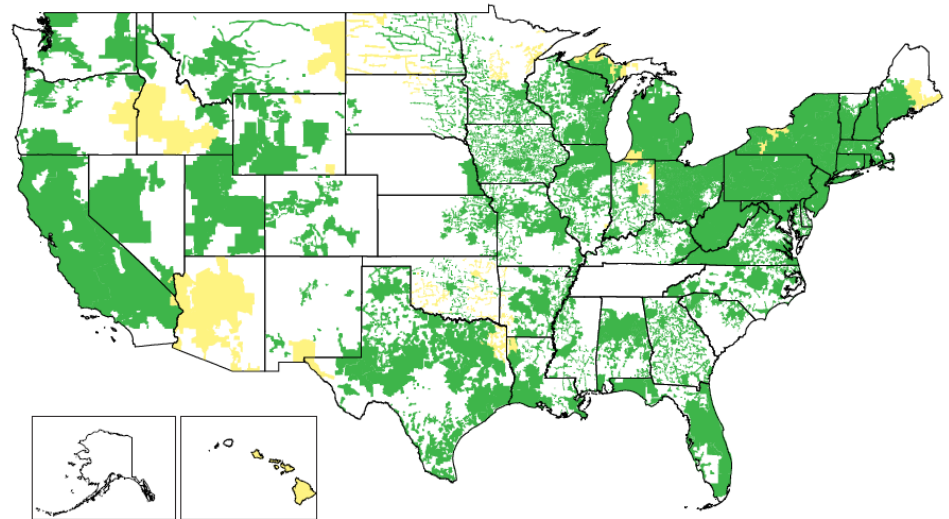
Emergency Operations Center (EOC)

- Centralized command structure
- Optimize resource coordination
- Coordinate assistance from other utilities
- Interface with Public Service Commission, media outlets and communities



Mutual Assistance

- Member of the EEI Midwest Utility Mutual Assistance group
- Work with over 35 other utility companies with 4800 associated line resources
- Pre-arranged agreements to speed movement of mutual assistance aid to restoration efforts
- Distribute mutual assistance resources throughout restoration area.



What does it take to get customers restored?

- Perform damage assessment
- Perform switching to restore some customers quickly
- Complete work that will have the biggest impact on the most customers first (circuit outages)
- Repair smaller, more isolated outages
- Repair single outages
- Non-outage related work (wires down, but lights still on etc.)



Communicating with customers

Press conferences with frequent customer updates



Receive Outage Alerts
Keep updated on your outage status with an alert. [\(more\)](#)

Various customer options to receive information



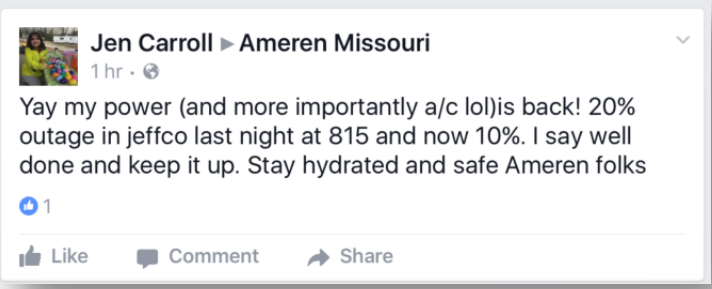
24 Hour Customer Care

Outage Map: Missouri



Interactive outage map

Customer interaction using social media



Working with communities and critical customers



Logistics

- Work with area hotels to accommodate employees and outside resources working away from home
- Work with local business to assemble staging sites in large parking lots
- Provide overnight truck fueling and truck parking



Logistics



- Meals:
 - Feed employees at their location or near damage to reduce delays in restoration and help co-workers stay engaged throughout restoration:
 - Breakfasts in hotels and work headquarter
 - Boxed lunches delivered to job sites and provided to employees prior to beginning the days work
 - Dinner in hotels and works headquarters

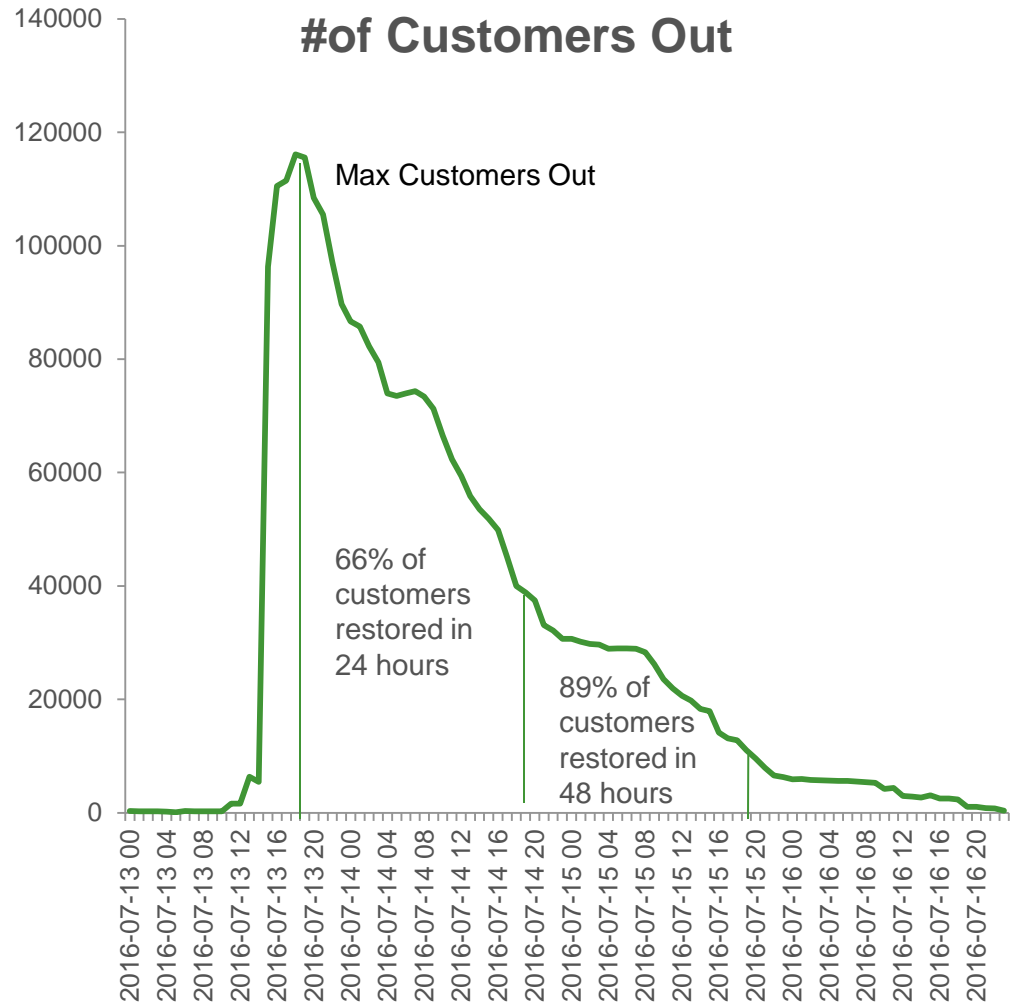
Objectives

- Safety of our co-workers, contractors and the public
- Communications
- Most effective effort
 - Restore as many customers as quickly as possible
 - Most cost effective use of our resources
 - Keep restoration resources engaged by providing materials and logistics on site



Recent Storms – July 13th

- 40 mph sustained winds for up to 3 minutes at a time with gusts of up to 57 mph
- Customer outages peaked at 116,118.
- Restoration completed with no safety incidents
- 78 hours until last customer restored
- Approximately 100 poles damaged and repaired
- 168,420 feet of wire (32 miles) replaced
- Approximately 200 cross arms broken and replaced



Recent Storms – July 13th

- 855 linemen, including 326 from outside utilities
- Resources brought in from mutual assistance partners from Missouri Co-Ops, Wisconsin, Michigan, Indiana and Kansas City Power & Light
- 1800 employees engaged
- 5 separate staging sites at local business parking lots
- 14,571 meals provided to improve resource efficiency
- 2,300 beds
- 20,827 gallons of fuel delivered to trucks overnight for efficiency



Resource coordinators working from large auditorium

Questions?

