

ERCOT Board of Directors - CenterPoint Energy's Response to Hurricane Harvey

Kenny Mercado, Senior Vice President, Electric Operations

October 17, 2017



ALWAYS THERE.®

Hurricane Harvey – A Record-breaking Storm



August 26 – September 4:



- **52 inches** of rainfall in southeast Texas
- Harvey made landfall **multiple times**



- **Category 4** near Port Aransas, Texas
- **Tropical storm** in Cameron, Louisiana

- More than **42,000** lightning strikes



- Record number of tornado warnings in southeast Texas

Harvey by the Numbers

Electric Operations Response



- **1.27 million** total restorations
- **293** circuits locked out and **4,494** fuses out
- **17** substations out of service or inaccessible due to high water
- **7** transmission lines locked out
- **2,200** employees plus **1,500** contractors & mutual assistance from **7** states
- **308** SAIDI minutes
- **755 million** total minutes out over 10 days
- **83** buildings in Downtown Houston lost electrical service due to high water



Harvey by the Numbers

Electric Operations Response

- Near zero injuries and accidents
- More than **1,200** safety orientations and **120** crew safety observations
- **36** air boats, **15** drones and **15** amphibious vehicles used



Impact of Grid Modernization

Benefits of Advanced Metering System (AMS) and Intelligent Grid



- Intelligent Grid helped avoid outages
 - Operated **250** devices impacting **140,000** customers
 - Avoided **41 million outage minutes**
 - **16.71 SAIDI minutes** saved
- AMS meters increased efficiency during the storm
 - Executed **45,000 orders** remotely at **97% performance**
 - Billed **700,000 accounts** with actual readings at **98.9% performance**
 - Executed remote turn off/on for safety reasons
- Use of real-time analytics to assess, monitor and resolve cases
 - Aided in developing better situational awareness
 - Allowed us to correlate weather and flooding information with outages, providing operations with critical decision-making tools



Impact of Grid Modernization

Use of Technology during Storm



- Drones helped to assess damage and evaluate work conditions
 - **500 locations** were tracked using **15 drones**
 - Enabled real-time situational awareness
 - Infrared capabilities helped identify equipment that needed further inspection
- Ability to use **Power Alert Service (PAS)** to keep customers informed
- Memorial mobile substation
 - **50MVA** mobile substation installed on private property in **7 days**
- Flood wall at Grant substation helped protect service to Texas Medical Center



Harvey by the Numbers

Customer Service Response



- **176,193** calls to the call center
- **67,479** were answered by agents with IVR handling the remainder
- **352,629** outage notifications delivered through PAS service
- **22,257** new PAS enrollments

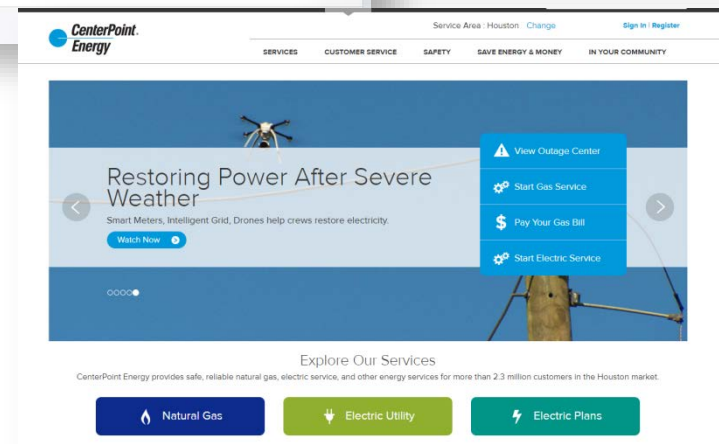


Harvey by the Numbers

Customer Service Response



- **160** Facebook posts that reached **1,095,314** people
- **566** tweets that reached **2,531,685** people
- **630,206** visits to CenterPointEnergy.com
- At the height of the storm, web traffic was more than **600%** higher than average
- Translated more than **50** communications into Spanish



Harvey Video



Harvey Video

