

Electric Service Reliability Monitoring

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Regulatory framework

- Kentucky statutes require all utilities to provide “adequate, efficient and reasonable service” and reasonable continuity of service
- Regulations also address electric service quality
 - - Voltage and frequency requirements
 - - Utilities “shall make all reasonable efforts to prevent interruptions of service” and must work to restore interrupted service with “the shortest possible delay”
- No numeric standards for reliability in either statute or regulation
- To date, PSC has not adopted either incentives to improve reliability nor penalties for poor reliability

PSC reliability assessments

- Investigations of reliability issues affecting specific utilities or service areas
- Evaluations of utility performance following major weather-related power outages
- 2007 reliability study

2007 reliability study

- Grew out of major infrastructure study conducted in 2005
- Findings in 2005 study:
 - No uniform reliability reporting standards
 - No vegetation management standards

2007 reliability study

- All jurisdictional electric utilities participated
- Provided information on collection of reliability data and vegetation management practices
- PSC conducted hearing

2007 reliability study

Results of 2007 study:

- Annual reporting requirement
- Uniform reporting standards
 - System Average Interruption Duration Index (SAIDI)
 - System Average Interruption Frequency Index (SAIFI)
 - Customer Average interruption Duration Index (CAIDI)

2007 reliability study

Results of 2007 study (cont.):

- SAIDI, SAIFI, CAIDI calculated for entire system
- Minimum of five previous years to be reported annually
- All outages to be reported
- Analysis of outage causes in previous year

2007 reliability study

Results of 2007 study (cont.):

- 10 worst-performing circuits for each index to be identified, with principal outage causes listed
- Utilities to submit vegetation management plans to PSC

2007 reliability study

No reliability standards proposed:

- Reliability trends should be analyzed over time to see whether standards are justified
- Wide variation in operating conditions

No vegetation management standard proposed for similar reasons

Reliability results

Overall average reliability is better than 99.95 percent

Average customer – fewer than 2 interruptions per year

Average TOTAL duration of interruptions – 1 to 3 hours

Major outages

Two worst electric power outages in Kentucky history occurred over five-month period in 2008-2009

September 14, 2008 wind storm



600,000 customers without power at peak

January 2009 ice storm



770,000 customers without power at peak

The “Ike and Ice” report

- Investigation initiated after wind storm
- Expanded following ice storm
- Focused on electric utilities, but also water and telecommunications
- Lengthy data requests – 217 questions to electric utilities

The “Ike and Ice” report

- Focus on all aspects of utility operations – preparedness, system construction, vegetation management, restoration, costs, coordination with emergency responders, communication with customers, etc.
- Included evaluation of PSC
- Customers input via online survey

The “Ike and Ice” report

- Report issued November 19, 2009
- 64 findings and recommendations
- Utility responses by March 1, 2010
- PSC now evaluating possible future actions, including regulatory and statutory changes