



Cyber Security in the Energy Industry

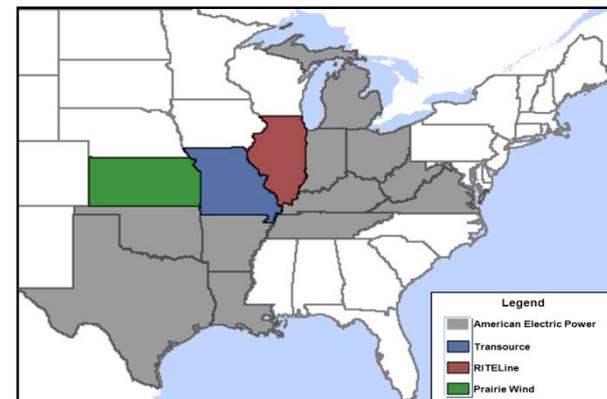
**UT Energy Week
Austin, Texas**

**Kip Fox
President
Electric Transmission Texas, LLC**

**Managing Director
AEP Transmission - West**

AEP Transmission

- **AEP owns the largest transmission system in the United States, delivering electricity to more than five million customers**
 - Service territory covers approximately 200,000 square miles in 13 states
 - Over 97,000 square miles in Texas
 - More than 40,000 circuit miles of transmission lines, including over 2,100 circuit miles of 765-kV transmission
 - More 765-kV than all other U.S. utilities combined



- **AEP Transmission is an advocate of efficient transmission systems and technological innovation**
- **Leadership in emerging markets, project development and technology**

AEP Transmission manages a robust portfolio of transmission assets and investments.

Newly established transmission-only entities provide greater transparency to investors and allow AEP to aggregate transmission growth.





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AEP Cyber Security Statistics 2018

- 1,400+ unsuccessful Cyber Attacks on AEP and Subsidiary systems (operations, financial, customer, regulatory, environmental and other systems)
- Transmission Substations on the Terrorist Top 10 lists*
- Spending over \$100 million on Cyber and Physical Security
- New Federal Energy Regulatory Commission rules on Cyber Security in place

* Source: Dept. of Homeland Security

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Why Cyber Security is Important (Now and in the Future)

- Cloud Technology – Malware and volume based attacks
- Switching Operations – Moving to Automation
- Safety of \$40 Billion+ in Financial Transactions
- Customer Information Integrity

Keeping the Lights ON

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