Winter Storm Elliott Update

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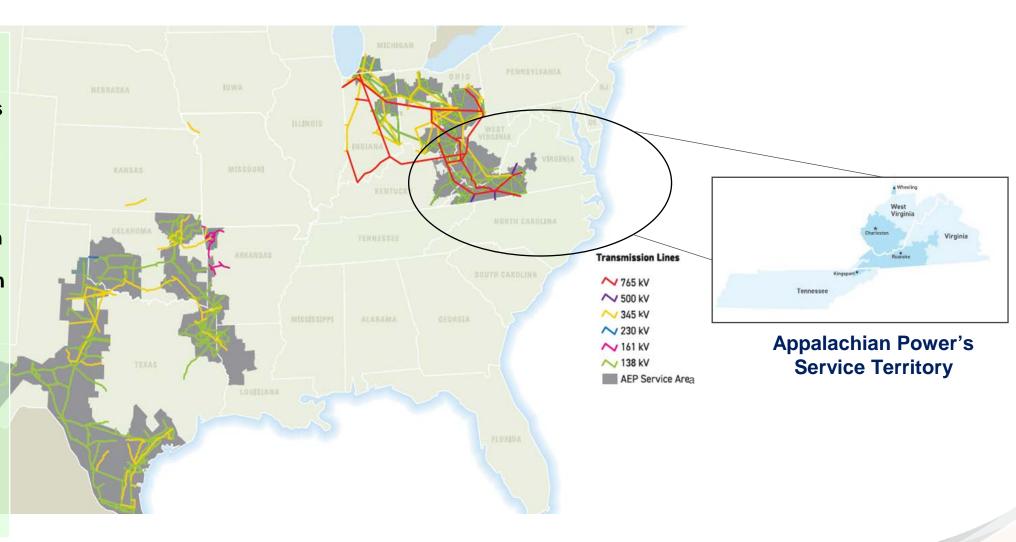
January 2023



AEP and Appalachian Power Overview

About AEP

- 5.5 Million Customers in 11 States
- 16,800 Employees
- The Largest
 Transmission Owner
 in North America with more than 40,000
 Miles of Transmission Lines
- Transmission Assets in PJM, SPP, MISO and ERCOT
- 223,000 Miles of Distribution Lines
- 30,000 MW of Generating Capacity





Investing in West Virginia's Transmission Grid

Transmission projects totaling more than \$2.3 billion completed since 2012 to benefit West Virginia customers

Station Project > \$1 Million Investment
 Line Project > \$1 Million Investment
 AEP Transmission Line
 USA Freeway System





Modernizing West Virginia's Infrastructure

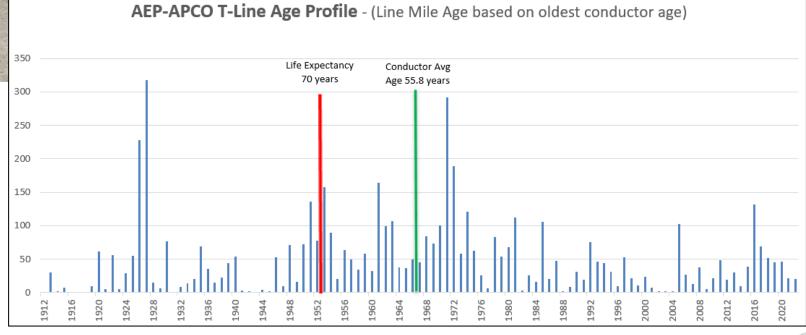
An AEP Company



Photo of AEP line installation in 1925. Many such facilities remain in service today.

AEP Archives – 1925 Backfilling crew on tower construction on the Philo-Canton transmission line in Ohio



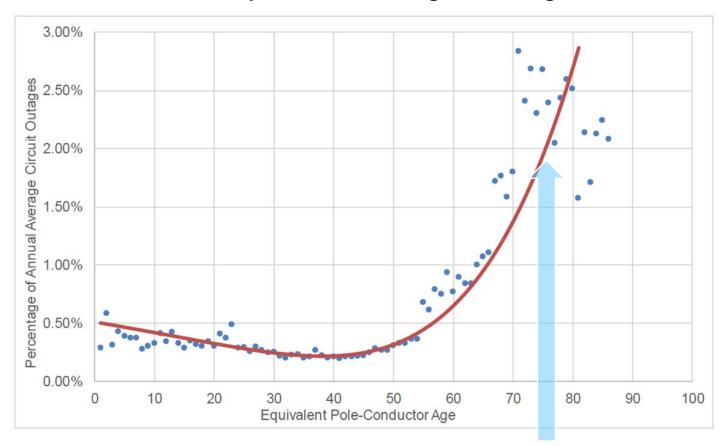


AGE



Reliability & Resilience Benefits of Transmission Investment

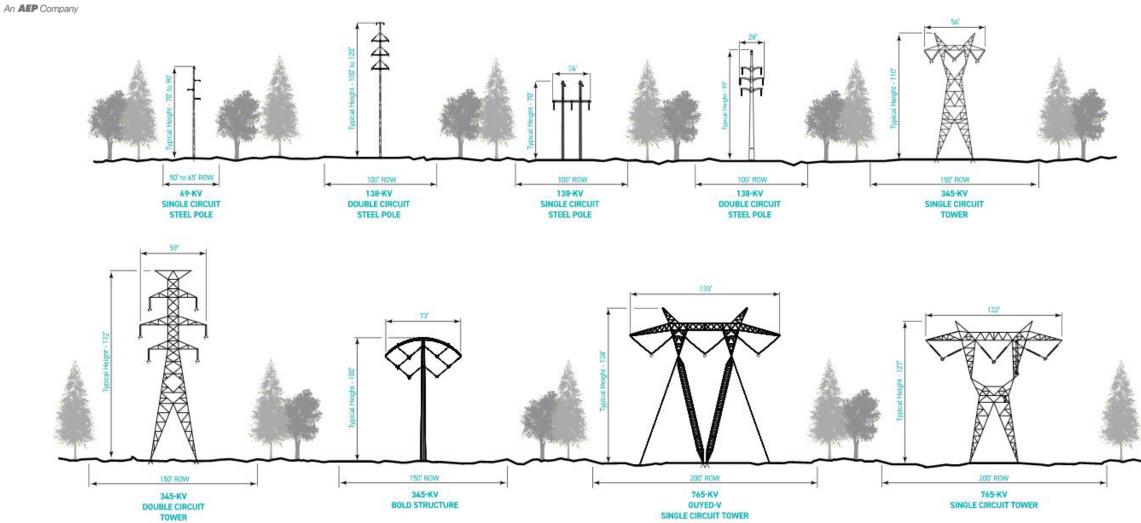
Relationship Between Asset Age and Outages



Analysis shows the risk of equipment failure at 75 years of age is around 8 times greater than the risk of failure at age 40.



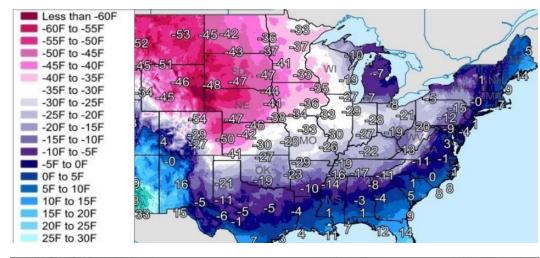
Typical Transmission Structures

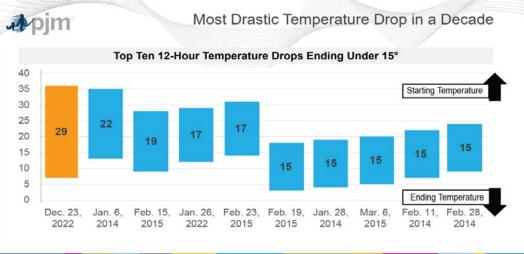




Winter Storm Elliott

- Elliott impacted much of the Midwest and Northeast with high winds and heavy snow, followed by extreme low temperatures as far south as Texas and Florida.
- Temperatures across PJM plummeted from Dec. 23 through the morning of Dec. 25, with record lows in some areas and record drops in some regions.
- Cold weather alerts were issued by the PJM, ERCOT and SPP regional transmission organizations (RTOs) for December 21-26, 2022.

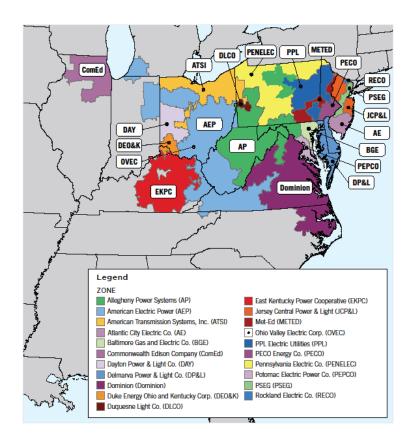






Winter Storm Elliott Impacts in PJM

- Actual load (electricity demand) was 10% higher than PJM forecast.
- Holiday weekend load was an extreme outlier in magnitude and timing over a 10-year period.
- Load remained unusually high overnight on Dec. 24 (40,000 MW higher than average peak demand).
- Significant portion of generation failed when PJM called on reserves.







AEP's System Performance During Elliott: Successfully Moving Generation

AEP's System Performed Extremely Well During Elliott:

No AEP transmission outages during the storm directly impacted generation capacity delivery

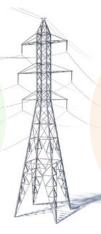
Appropriate preparation helped to ensure success:

Staffing

Increased Energy Delivery
Operations staffing and
created backup plan to
address potential travel
concerns.

Transmission Restoration

AEP Energy Delivery
Operations and PJM worked
with AEP Transmission Field
Services to return all
transmission to service that
was offline for planned
outages.



Generation Restoration

PJM worked with AEP to restore all available generation that was offline.

Planning and Investing

AEP has appropriately developed and maintained the transmission system (including right-of-way clearing) to ensure reliability during extreme weather events.

Proactive Communication

AEP Energy Delivery Operations had preevent coordination meetings with Appalachian Power to discuss possible storm impacts and responses.



PJM held meetings in advance of the storm with all members to discuss messaging and possible emergency actions.



AEP Commercial
Operations (the
registered Curtailment
Service Provider on
behalf of AEP)
prepared for possible
demand response
action.



Actions Taken During Emergency Events

Levels defined by NERC EOP-011-1

Energy Emergency Alert (EEA) Level 1	All available generation resources in use All generation is committed, and there is concern about maintaining required reserves for BA Non-firm wholesale energy sales curtailed.
EEA Level 2	BA is no longer able to provide its expected energy requirements and is energy deficient Operating plan implemented, including public appeals and demand response BA is still able to maintain minimum reserves Market participants and other BAs notified Transmission limitations evaluated and revised BA makes use of all available resources
EEA Level 3	Firm load interruption imminent or in progress BA is unable to meet minimum contingency reserve requirements System & reliability limits revaluated and revised Immediate action taken to mitigate undue risk to the Interconnection, including load shedding.

