AEP’s 1-765 Proposal and the Future of America’s Transmission Grid

Mike Heyeck, AEP Vice President – Transmission

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Transmission and the U.S. Economy

Our economy demands a robust electric transmission interstate system enabled by the Energy Policy Act of 2005

“We have a modern interstate grid for our phone lines and our highways. With this bill, America can start building a modern 21st Century electricity grid as well.”

Goals of U.S. Transmission Development

• Transmission development should provide a higher degree of transparency to:
  - Foster head-to-head competition among generators
  - Provide a robust and fair market
  - Encourage siting of more fuel-diverse, newer technology and environmentally friendly generators
  - Provide a higher degree of reliability to foster enhanced national security
AEP Transmission Strategy Overview

• Developing the next interstate system using 765-kV transmission

• Stage set by AEP CEO Mike Morris in paper published in Public Utilities Fortnightly (January 2006)
AEP’s I-765 Proposal
Is the Route Final?

• No. This is AEP’s initial proposal

• Studies remain to be completed, input sought

• PJM planning process will determine terminals, then AEP (and partners if applicable) will determine the appropriate, most efficient and environmentally friendly right-of-way
What Would I-765 Do?

- Increase Midwest-to-East transfer capability by about 5,000 MW, the published goal of PJM’s Project Mountaineer
- Reduce peak hour losses by approximately 280 MW
- Reduce congestion substantially
The Color of Congestion
**1-765 Financial Information**

- **Cost:** $3 billion (nominal dollars)
- **Will save consumers more than $30 million annually associated with loss savings**
- **Will relieve significant congestion**
  - PJM congestion costs for 2005 are over $2 billion
• AEP Transmission Company LLC was formed in January 2006
• Wholly-owned subsidiary
• Could qualify as a utility in several states – the project will not be a merchant line
Regulatory Filings

- FERC: Requesting eligibility for incentives
- DOE: Seeking designation as a National Interest Electric Transmission Corridor (NIETC) for the I-765 line
  - We intend to work with the states first
- PJM: Requesting I-765 be included in Regional Transmission Expansion Plan
AEP and 765-kV

- AEP announced a plan in 1966 for a 765-kV interstate network integrating major generating stations and load centers in seven states.
- Today, AEP operates more than 2,100 miles of 765-kV, still the largest capacity line used in the United States.
- 765-kV is the best choice for areas where increased capacity is vital and right-of-way space is at a premium.
Benefits of 765-kV Transmission

For long distance transmission (longer than 100 miles), one 765 kV line on a 200-foot-wide right-of-way can carry the same amount of power as fifteen double circuit 138 kV lines having a combined right-of-way width of 1500 feet.

Note: Approximate relationship based on Surge Impedance Loading (i.e. reactive power balance point). 138 kV double circuit tower lines with single conductor per phase compared to 765 kV single circuit lines with four conductors per phase.
Benefits of 765-kV Transmission

For long distance transmission (longer than 100 miles), one 765 kV line on a 200-foot-wide right-of-way can carry the same amount of power as five single circuit 345 kV lines having a combined right-of-way width of 750 feet.

Note: Approximate relationship based on Surge Impedance Loading (i.e. reactive power balance point), 345 kV single circuit tower lines with two conductors per phase compared to 765 kV single circuit lines with four conductors per phase.
AEP’s Wyoming - Jacksons Ferry 765-kV Line

- AEP’s 90-mile Wyoming-Jacksons Ferry line connects stations in Wyoming County, W.Va., and Jacksons Ferry, Va. – energized June 20, 2006
- AEP first proposed the line in March 1990 as the Wyoming – Cloverdale project
- AEP was patient – worked for many years with stakeholders to bring project to fruition
Conclusion

• AEP has the experience and expertise to provide this vital I-765 interstate link for the U.S.
  - We are committed to work with partners and other stakeholders to get this done

• The concept of I-765 is the enabler for a better energy position in the U.S.

• Advanced technologies should include higher voltage transmission such as 765-kV