



AEP's I-765 Proposal and the Future of America's Transmission Grid

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Michael Heyeck

AEP Vice President, Transmission

Michael Heyeck is vice president-Transmission, responsible for AEP's 11-state transmission system, including engineering, construction and maintenance services, operations, asset management, and business services.

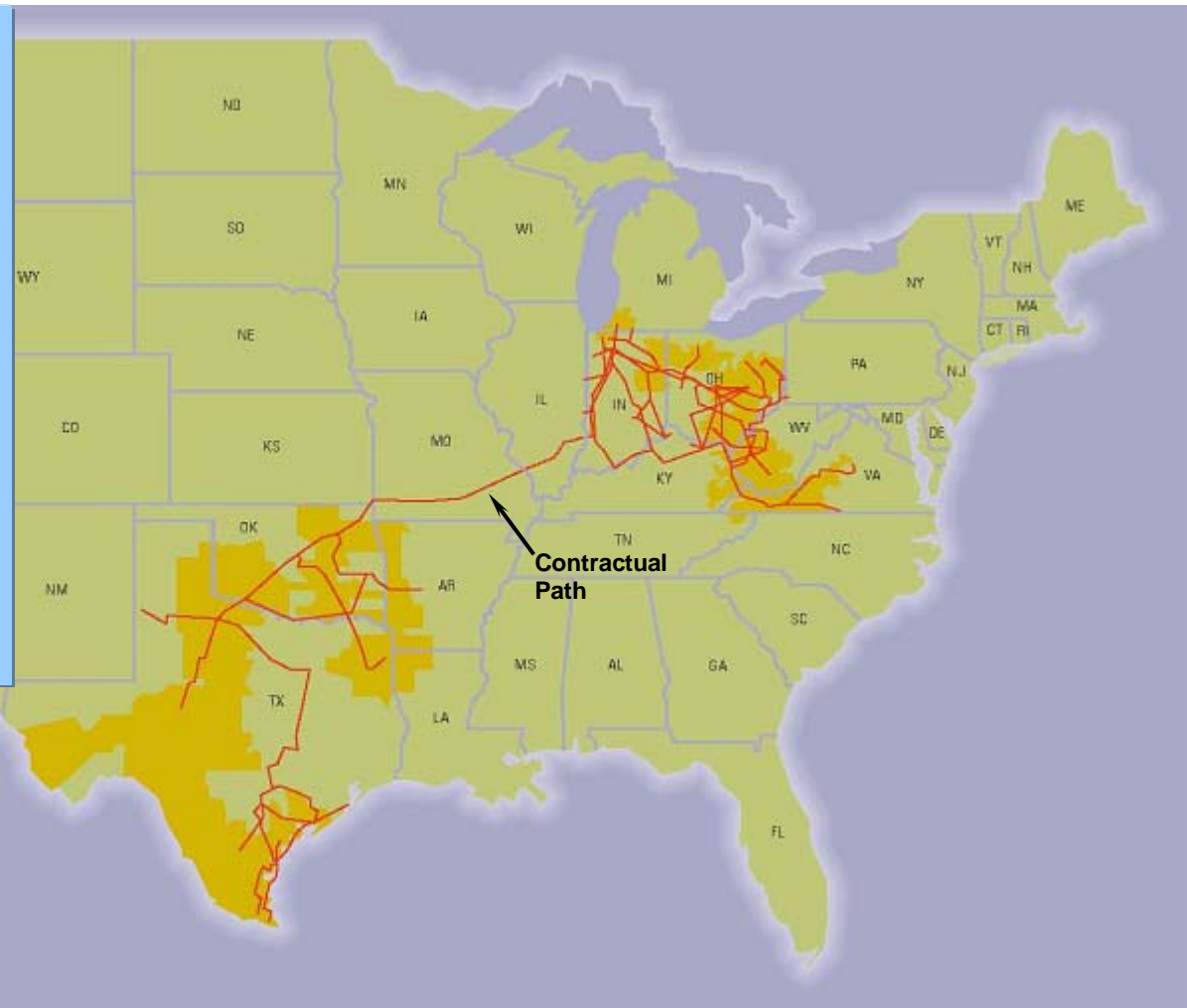
Heyeck was previously vice president-Transmission Asset Management since August 2004. Since June 2000, he held a leadership position in Corporate Planning and Budgeting for corporate budgeting and economic forecasting. Prior to June 2000, Heyeck held various engineering and leadership positions in Transmission Planning and Transmission Operations, and for the period 1994-1996, he served in Corporate Planning and Budgeting in a project management role to develop and install AEP's Activity-Based Management System, which modernized AEP's budgeting practices.

Heyeck earned his bachelor's and master's degrees in electrical engineering at the New Jersey Institute of Technology. He earned a master's in business administration at the University of Dayton. He also is a graduate of the Executive Program at the University of Virginia's Darden School and the AEP Management Development Program at The Ohio State University. He is a registered Professional Engineer in the State of Ohio.

AEP Transmission System

- Approximately 39,000 miles of transmission
- Approximately 36,000 MW of generation
- Serving over 5 million customers
- Serving 11 states

● AEP Service Area
— Major Transmission Lines





US Transmission Ranking

Ranking	Company	Transmission Mileage *
1	AEP	38,900
2	Southern Company	28,000
3	Pacific Gas & Electric	18,610
4	Xcel Energy Inc.	17,340
5	Tennessee Valley Authority	17,000

Mergers Or Pending Mergers Since December 2005

Ranking	Company	Transmission Mileage *
2.5	Duke / Cinergy	19,760
3.5	PacifiCorp / MidAmerican	17,580
< 5	Exelon Corp / PSE&G	7,510

* Based on data available as of December 2005



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.”*

*-- President George W. Bush,
in signing the Energy Policy Act of 2005*



Energy Policy Act of 2005 & AEP Position

- Transmission development incentives (e.g., enhanced ROE, return on CWIP)
 - Eligibility should not depend on business model
- DOE study and identify “national interest electric transmission corridors” (NIETC)
 - Early designations should be expedited for most needed transmission development
- FERC enabled as “backstop” siting authority
 - Good faith siting efforts should be made in states first
 - FERC should be siting authority for federal land
- FERC to select an Electric Reliability Organization (ERO)
 - ERO should establish clear and mandatory reliability standards with penalty provisions



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)

Perspective

Electric Transmission: Building the Next Interstate System

We must efficiently deliver wholesale power within competitive regional markets.

By MICHAEL G. MORRIS



When President Eisenhower was growing up in Kansas, he saw America's byways and back roads develop to meet point-to-point needs, eventually forming a loosely connected national interstate highway network.

The U.S. electric transmission system has similar roots, and it needs a

similar vision to meet the needs of the 21st century.

Eisenhower realized the value of good highways in 1919 when he participated in the U.S. Army's first transcontinental motor convoy from Washington, D.C., to San Francisco—a 62-day trip. During World War II, he crystallized his vision of an interstate highway system based on Germany's autobahn. In 1956, Eisenhower signed the Federal-Aid Highway

Act, creating the highway system we enjoy today.

Eisenhower envisioned vast societal benefits for national defense, economic development, and personal safety. He did not get bogged down in structural or control issues. He saw a solution and moved to implement his vision.

Evolution of Transmission

The nation's transmission system has evolved from a series of source-to-load needs, but there were exceptions. In 1966, for instance, American Electric Power (AEP) announced plans to build an interstate 765-kV system to enable diverse siting of a new era of 1,300-MW generating units.

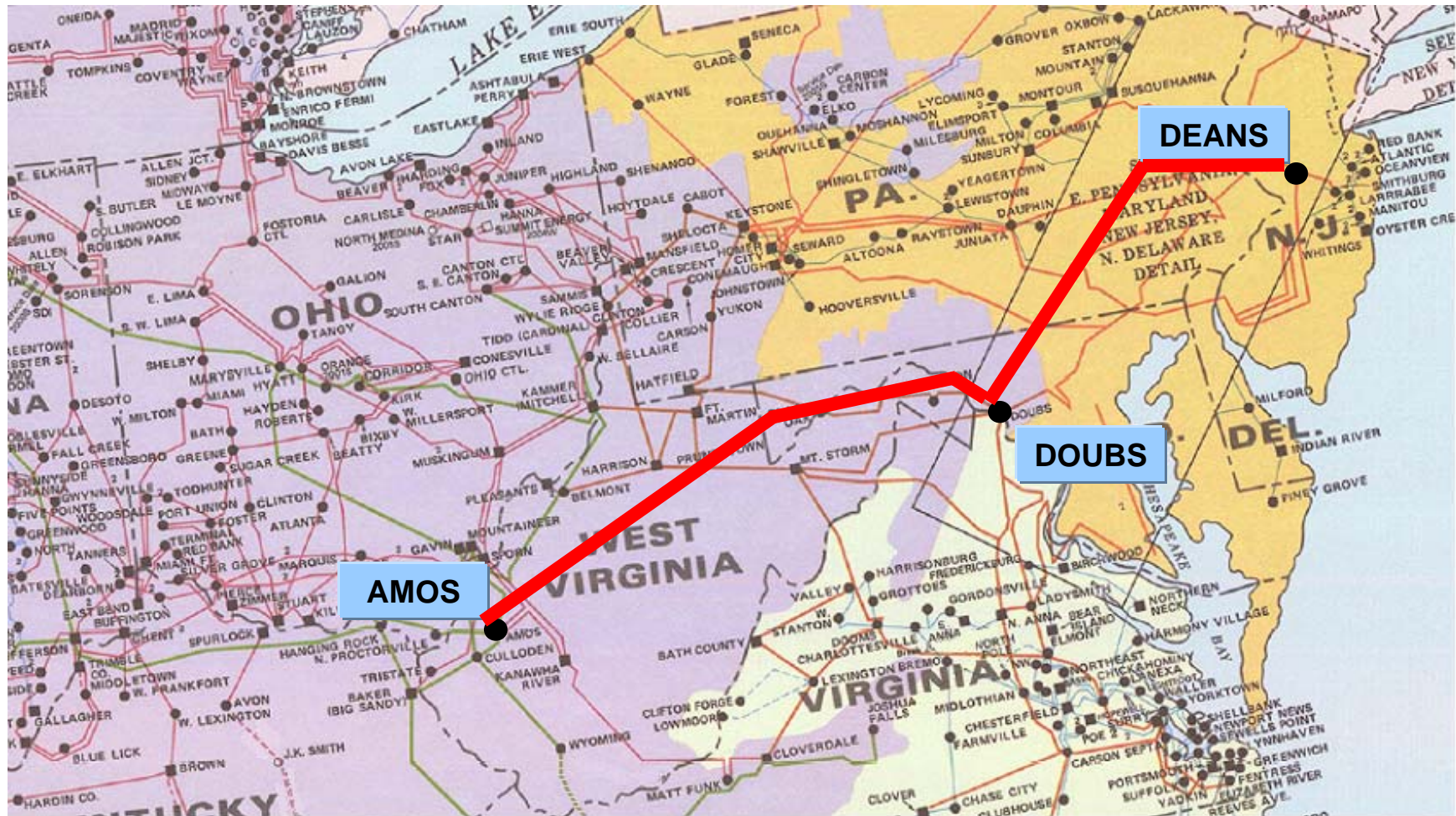
AEP's 765-kV system was developed to meet the expanding electricity needs of our states and customers via an interstate system covering seven states. That system, which also provides states with the economic opportunities that accompany the siting of new generation, continues to expand with customer demand. The new 765-kV line AEP is building from Wyoming, W.V., to Jacksons Ferry, Va., is a case in point. Other examples of interstate network development include the 500-kV networks in the East, Southeast, and West.

But the transmission infrastructure boom of the 1960s and 1970s has dwindled. Recent development largely has been limited to addressing local reliability needs and connecting new generation to the existing grid.

The federal government has defined and refined the regulation of interstate electric transmission over the last 70 years, yet we continue to experience transmission bottlenecks, paying billions of dollars annually because of congestion, reliability must-run contracts for inefficient generating plants, and lost opportunities for technologically advanced generating plants and new industrial plant development.



AEP's I-765 Proposal

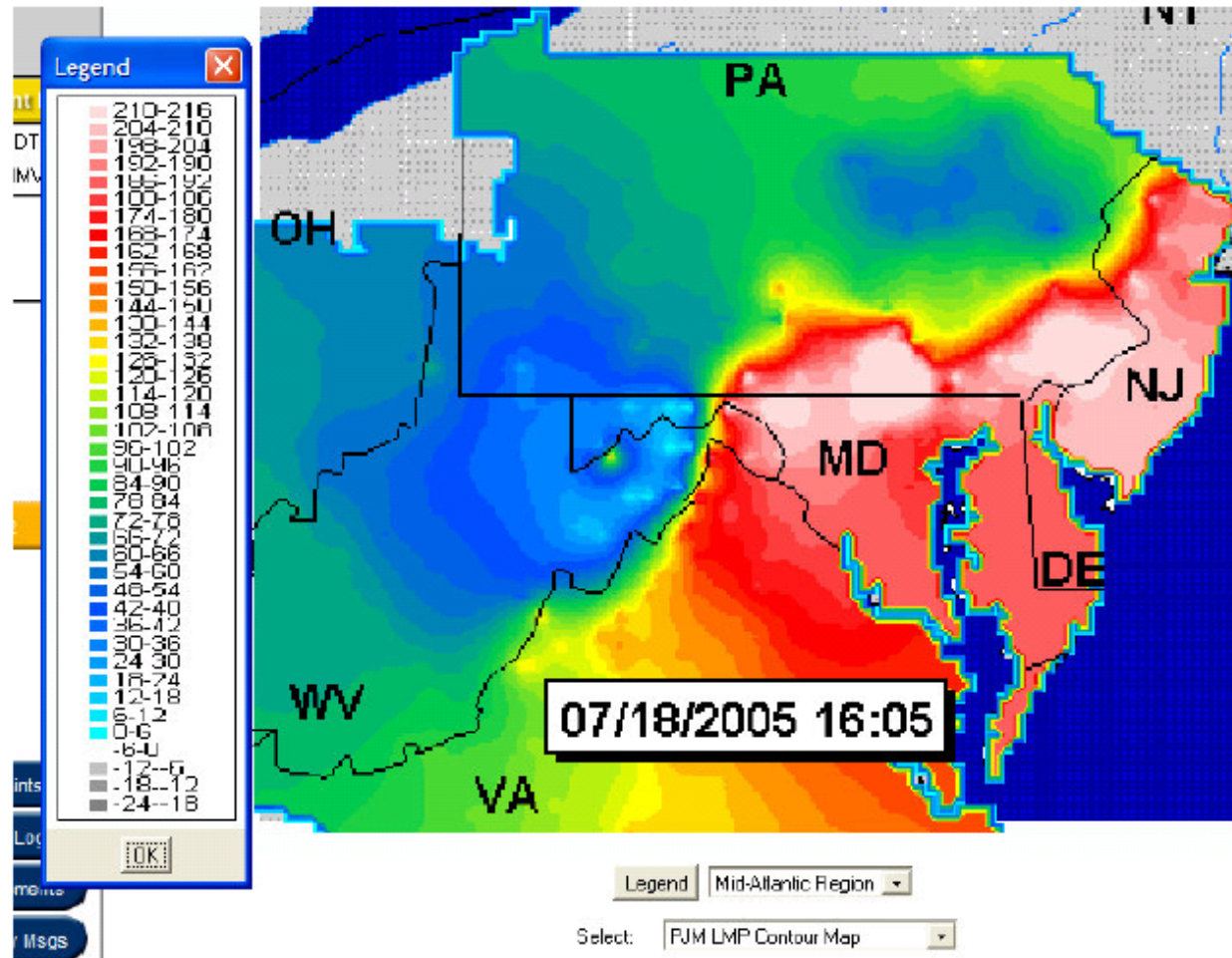




What Would I-765 Do?

- 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





I-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 in 2005 was over \$2 billion



I-765 Corporate Structure

- 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

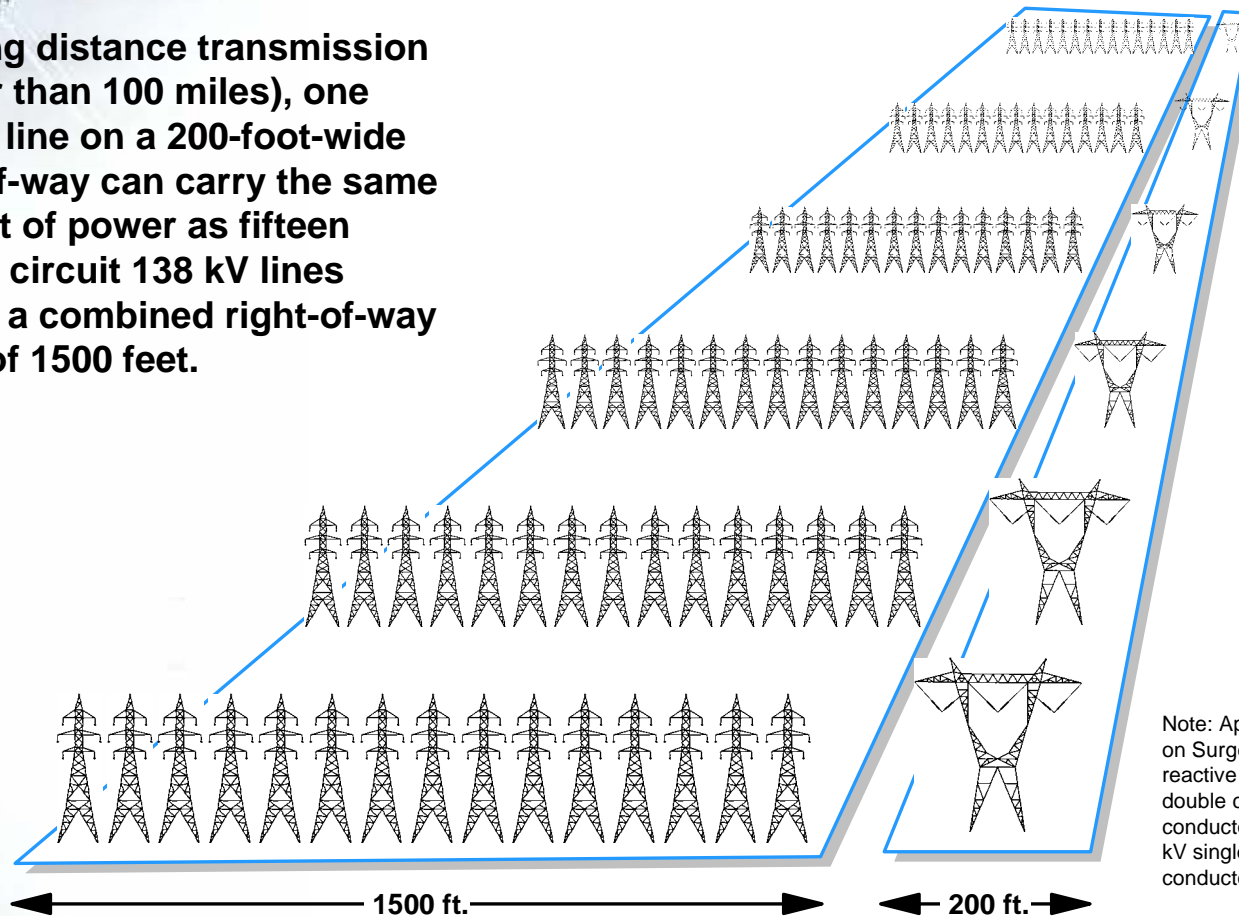


AEP and 765-kV

- 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

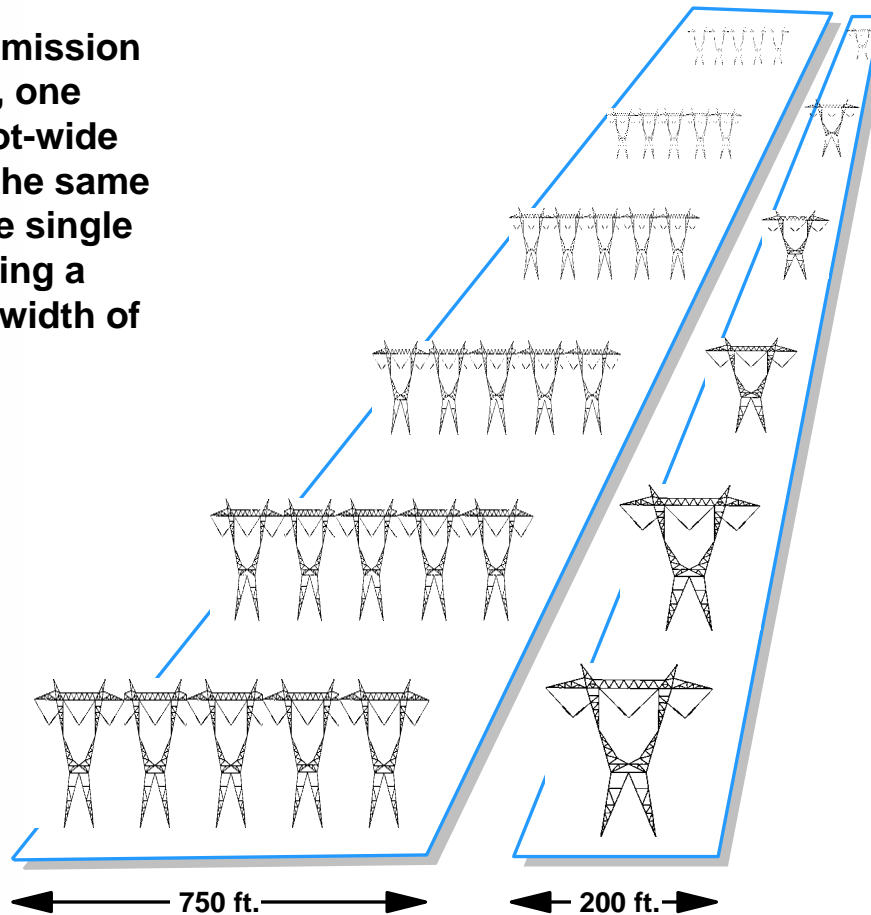
For long distance transmission (longer than 100 miles), one 765 kV line on a 200-foot-wide right-of-way can carry the same amount of power as fifteen double circuit 138 kV lines having a combined right-of-way width of 1500 feet.



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, WV, and Jacksons Ferry, VA.
- The area hasn't seen major transmission reinforcement in more than 30 years.
- AEP first proposed the line in March 1990 as the Wyoming-Cloverdale project.
- AEP has persevered – worked for 16 years with all stakeholders to bring project to fruition – energized on June 20, 2006.



New Impetus In Transmission Development

- Industry should work together to develop transmission
 - Transmission is a public service
 - Chairman Kelliher in remarks at 2006 Transmission Summit on March 13, 2006 – “I must repent....Transmission is not a commodity”
- Energy Policy Act of 2005 was a watershed event for transmission development
- I-765 project is first mover under EAct provisions, but risks, barriers ahead for I-765



Conclusion

Now is the time for transmission owners to advocate the interstate grid the U.S. economy deserves.

"If not us, who? If not now, when?"

*-- Presidents John F. Kennedy and Ronald W. Reagan
Original Author Unknown*