



# Kansas City Power & Light Energizes Network with Motorola's PTP 600 Series Fixed Broadband Solution

Kansas City, Missouri



Motorola PTP 600 Series systems communicate from this KCP&L tower in Kansas City.

The large, licensed 6 GHz wireless systems used to monitor geographically disperse physical infrastructures are aging. Their analog technology, carrying transmissions that are increasingly digital, won't adapt to applications such as web-based remote monitoring. However, the cost to migrate to licensed 6 GHz digital networks can be prohibitive, and bridging a new digital link to an old analog one is risky. Many companies, like Kansas City Power & Light (KCP&L), are discovering a powerful, cost-effective, unlicensed underbuild solution.

## Customer

Headquartered in Kansas City, Missouri, KCP&L ([www.kcpl.com](http://www.kcpl.com)) is a leading regulated provider of electricity in the Midwest region of the United States. KCP&L is a wholly owned subsidiary of Great Plains Energy Incorporated (NYSE: GXP), the holding company for KCP&L and Strategic Energy, LLC, a competing electricity supplier.

KCP&L has evolved into a full-service energy provider and resource. The company's proven reliability and affordable rates have helped build satisfaction among residential and commercial customers in Missouri and Kansas. In national comparisons, KCP&L ranks among those utilities offering the lowest average prices for all customer segments and the least number of power interruptions due to outages. To better serve customers, the utility has been a leader in using technologies such as e-commerce and automated meter reading.

## The Situation/Challenge

KCP&L operates a 15-year-old 6 GHz licensed digital microwave system throughout its service area, connecting power plants, substations and corporate locations. KCP&L began noticing that, as demand grew for higher-bandwidth applications, its system could no longer handle the requirements of Internet access, multimedia or VoIP, and was in need of an overhaul.

In addition, KCP&L needed to upgrade the entire network to better measure, control and monitor its systems. Overall, KCP&L was specifically looking for a solution that would provide additional capacity, security and redundancy to its current network at a reasonable cost.



KCP&L's Hawthorn Station in Kansas City

### Technical Requirements

As a result of outgrowing its existing T1 network, the utility needed to:

- Enhance capacity, security and reliability in its internal data communications network
- Leverage existing infrastructure
- Add bandwidth to support advanced applications
- Increase data capacity/speed of the backbone data network
- Improve response time in corporate applications for customers in remote locations, particularly power plants

### Deployment Detail and Interoperability

This seven-phase project began in September 2005. Rather than replacing its 6 GHz licensed network, KCP&L decided to run the Motorola PTP 600 Series network in parallel with the current system. The underbuild implementation was completed with minimal interruption in service.

KCP&L saved a considerable amount of capital using the PTP 600 Series radios in a ring topography to provide directional redundancy. The radios were incorporated into KCP&L's existing microwave antenna system, eliminating the need for new, costly antenna systems. The utility company added filters to the existing duplexers on the digital microwave radio, creating a quick and inexpensive Ethernet backbone that used well-engineered and proven radio paths.

To date, KCP&L has deployed 33 Motorola 5.8 GHz wi4 Fixed Point-to-Point Wireless Ethernet Bridges – PTP 600 Series – that deliver 100 Mbps across its entire network, spanning more than 200 miles (322 km) from end to end. Because of the PTP 600 Series solution's ability to combat fading over long distances, high reliability throughout the network is sustained.

“KCP&L’s commitment to using technology has helped us achieve top-tier operating performance, resulting in an outstanding record of reliability and high customer satisfaction. When it came time to add additional bandwidth to our network, we turned to Motorola’s Point-to-Point Broadband Wireless Solutions Group for a powerful, high-capacity system that was cost-efficient and provided the necessary flexibility for future beneficial applications.”

— John Marshall, Senior Vice President, Delivery, KCP&L

### Results

The first phase, replacing a T1 line with a 5.8 GHz wireless connection to a remote power plant, boosted throughput from 1.544 Mbps to 60 Mbps. Because of the immediate, favorable results, KCP&L management decided to implement Motorola’s radios throughout the company. KCP&L can now transmit information at a staggering rate of over 80 Mbps, adding capacity, increasing security and establishing redundancy to its existing network without passing on the equipment and implementation costs to its customers.

Along with the cost-effectiveness of the Motorola solution, it opened the doors to applications previously impossible due to bandwidth constraints, such as video surveillance and backup of server data at remote locations. As an added benefit, productivity at those remote locations increased as application response time matched that of their corporate headquarters.

With the new technology in place, KCP&L is now looking at LAN extension applications to bring 100 Mbps connectivity to areas where a fiber or copper infrastructure can’t be supported.

### Why Motorola Point-to-Point Broadband Wireless Solutions Group:

- Cost-effective support for future network growth and bandwidth needs
- Valuable alternative to expensive T1 leased lines
- Easy integration with the existing network, plus support for advanced internal applications, such as remote monitoring
- Excellent engineering and technical support

### MOTOwi4™

The wi4 Fixed Point-to-Point Wireless Ethernet Bridges are part of Motorola’s MOTOwi4 portfolio of wireless broadband solutions and services that help customers improve communications, increase efficiency, and enhance customer and public service. Delivering IP coverage to virtually all spaces, the MOTOwi4 portfolio includes Fixed Broadband, WiMAX, Mesh and Broadband-over-Powerline solutions for high-speed connectivity over private and public networks.

### About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of seamless mobility, the people of Motorola are committed to helping you connect simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering “must have” products, “must do” experiences and powerful networks – along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US \$42.9 billion in 2006. For more information about our company, our people and our innovations, please visit <http://www.motorola.com>.



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