COTOC

Business Services

CASE STUDY

Ameren - Leveraging Smart Grid Innovations to Optimize Settlement Processes and efficiency

Summary

COTOC and PowerRunner partnered to modernize Ameren's settlement process through smart grid methodologies, innovative technology in utility management. The project Transformed Amren's settlement processes, enhanced operational efficiency, and enabled data-driven decision making ultimately benefiting both the organization and its clients.

Background

Ameren Corporation, a Fortune 500 company traded on the New York Stock Exchange, is the parent company of Ameren Illinois. Employing approximately 9,000 personnel across its multiple locations, it provides electricity to 2.5 million customers and square-mile area based in Collinsville, Illinois.

The company operates in a variety of energy markets, delivering electricity to 1.2 million customers in more than 1,200 communities, with a service territory spanning 43,700 square miles. Ameren Illinois' delivery system includes approximately 4,700 miles of electric transmission lines and 46,000 miles of gas pipelines. Ameren is dedicated to developing transmission infrastructure investments throughout the nation and builds projects that deliver clean, affordable and reliable energy to communities across the Midwest

The Challenges

We and PowerRunner partnered to modernize Ameren's settlement process and upgrade its tools that determined which customers accounted for losses. Ameren's previous Illinois Loss Study was performed 10 years earlier, with analytics suggesting actual losses had drifted over time driven by changing customer base, energy efficiency, and other factors. With each loss study costing $500,000 and taking 18-24 months to complete, Ameren sought modern solutions that could more accurately determine where losses originated, predict changes in the customer base and increase energy efficiency, among other factors.

Solution

Our team focused on four primary objectives: First, analyze and understand the current process to better grasp Ameren's needs while redesigning those processes. Secondly, to manage the implementation of

Capabilities

Program Management

Project Management

Change Management

Business Case Development

Process Reengineering

Testing

Quality Assurance

Training Development & Delivery

PowerRunner's software, a real-time data analytics software designed to provide forecast and real-time insights into operational performance. Also to utilize AMI smart metering data to calculate real-time. losses. Lastly, we developed and implemented training materials to ensure the staff was ready to use the new systems on day one following implementation.

Results

Implementation, Testing

COTOC replaced the previous static distribution loss factor calculation with a real-time hourly calculation with PowerRunner's Energy Analytics software. With particular focus on ensuring seamless integration with Ameren's existing systems, we employed a hybrid project management methodology that mended both agile and waterfall approaches.

Included test planning, creation of test scripts, coordination of testing efforts between PowerRunner and Ameren's IT departments and hands-on workshops with both Ameren's IT and PowerRunner's teams. This implementation plan was designed not only to adhere to deadlines but also to foster effective collaboration, ultimately leading to a successful deployment.

Re-design

We started with a thorough analysis of Ameren's existing settlement system, identifying areas for improvement and reimagining a new process that leveraged emerging technology.

Our team worked closely with Ameren's leadership, including the Director of the Transmission department, to benchmark and track critical information. This collaboration enabled COTOC to fully understand the current processes and develop a structured plan for the redesigned settlement framework.

Conclusion

This project resulted in a significant transformation of Ameren's settlement process, driven by the integration of AMI meters and PowerRunner technology. By moving away from static loss distribution calculations, Ameren adopted a real-time hourly calculation methodology utilizing advanced analytics. This change allowed the company to associate losses in real-time with individual energy users rather than relying on more general static loss calculations. The upgrade not only streamlined forecasting and settlement for each settlement aggregation but also empowered Ameren to make timely, data-driven decisions based on the latest energy consumption patterns.

The project was completed within the established timeframe and budget. Our comprehensive training ensured that staff understood and could effectively use the new tools and processes.

The integration of historical data with PowerRunner's real-time analytics eliminated the need for expensive and time-consuming loss studies, which previously cost $500,000 each study. With this new system, Ameren could continuously monitor real-time losses, making the settlement process more efficient, fair and responsive.