

Enterprise-wide data collection and knowledge transfer improved decision-making



To improve decision-making, American Electric Power (AEP) needed a data-collection solution that would provide consistency in data collection and enterprise-wide availability of data from their critical assets. Impending employee retirements meant they also faced the potential loss of essential history and experience on asset conditions. **Optimized Systems and Solutions (OSyS) developed the solution that delivered the needed capabilities and integrated easily into AEP's existing systems, enabling cost savings and mitigated risk.**

### The need

- *A better system to collect field observations on equipment and make the information more widely available*
- *A way to avoid knowledge gaps as employees retired*
- *A solution that integrated easily into existing systems*

### The solution

- *Comprehensive consultation to determine requirements and tailor the AutoTour field-data collection tool*
- *System design that integrated with existing company systems*
- *Building of a scalable implementation of AutoTour to be implemented in multiple customer plants across the U.S.*
- *Consultation on a plan for rolling out the software at each site, including assistance to the company's training department and adaptation of standard training materials*

### AEP

American Electric Power Co., Inc. (AEP) ranks among the largest generators of electricity in the U.S. and owns the nation's largest electricity transmission system. AEP's transmission system directly or indirectly serves about 10 percent of the electricity demand in the interconnected transmission system that covers 38 eastern and central U.S. states and eastern Canada. They also provide approximately 11 percent of the electricity demand in the transmission system that covers much of Texas.

### The challenges

To stay competitive in the power-generation industry and increase efficiency, AEP needed a better system to collect observations about their equipment in the field and make it available enterprise-wide through the corporate website. Implementing the system would also address the risk of losing the history of assets' condition and knowledge of workflow processes as a significant number of their operators quickly approached retirement.

The solution needed to integrate with their established computerized maintenance management system (CMMS) and PlantView®, which is an enterprise tool for condition status reporting and trending. This would allow them to derive the maximum value of an integrated system without costly modifications or replacements being required. Similarly, they needed a solution that would easily scale to support their entire fleet of fossil generation plants.

Further cost savings would be derived from choosing a solution that was easy to implement and required minimal training.

### The OSyS solution

From comprehensive consultation with AEP, OSyS was able to determine requirements and tailor the AutoTour field-data collection tool to meet AEP's needs. AutoTour allows users to record on hand-held computers observations about equipment in the field.

## Benefits realized

- *Informed decision-making concerning critical assets*
- *Enterprise-wide access to asset data*
- *Improved knowledge transfer*
- *Mitigation of risk associated with an aging workforce*
- *Integration into existing systems such as CMMS and PlantView®*

The data is then published in a common database that supplies the information for all the plant departments and also across the enterprise for trending, reporting and feeding other systems such as PlantView.

For AEP, OSyS built a scalable implementation of AutoTour that could be rolled out to more than 30 of their plants across 10 states in the U.S. The database is centrally controlled at AEP's main office. Because the AutoTour solution was designed to integrate with AEP's CMMS and PlantView systems, the data is analyzed by plant personnel and presented as part of the company's operational information.

OSyS also worked with AEP to create a plan for rolling out the software at each site. As part of the plan, we assisted AEP's training department in modifying the standard AutoTour training material so that it fit tightly with AEP's training program.

## A successful outcome

With the solution fully implemented, AEP plants collect data for trending and analysis in PlantView. The data is also available at the corporate website for analysis. As a result, AEP has a higher level of understanding concerning the state of their critical assets. That knowledge enables better-informed decisions in areas such as forecasting, purchasing, and maintenance. It also identifies best practices within the company, allowing AEP to capitalize on them.

AutoTour also helps AEP's operators document their daily routine of inspections, mandatory readings, and the multi-stage approval process. That enables an easier, more complete transfer of knowledge between those operators who are retiring and their replacements.

## The story continues

OSyS is currently working with AEP on a research project involving the implementation of radio-frequency identification (RFID) tags on critical components in their fossil plants. Since conditions in those facilities often are not conducive to using a barcode approach, AEP needs a better option for locating components within a round. The solution was to enhance AutoTour to use a generic RFID scanner that plugs into the compact-flash slot on any Windows®-based hand-held device. This allows the operator to identify equipment without having to read the name-plate information. That capability will increase the speed, efficiency and accuracy of collecting data in the field, further enhancing the company's ability to extract knowledge from its data.

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