



UPDATE

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PMA Partnership Implements New SCADA System at Springfield Operations Center

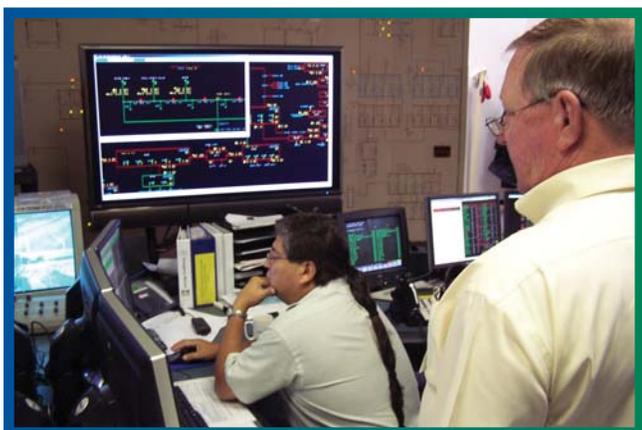
Southwestern successfully installed its new Supervisory Control and Data Acquisition (SCADA) system at its Operations Center in Springfield, MO, on June 20, 2006. This new software, developed in cooperation with Western Area Power Administration (Western), essentially replaces the old Unix-based commercial system with a personal-computer-based SCADA and Automatic Generation Control (AGC) power control system. The new system provides additional functionality that meets recent requirements from the North American Electric Reliability Council for better alarming capabilities and situational awareness, and also includes improved cyber-security features.

The SCADA/AGC Power Control System (PCS) being shared between the two power marketing administrations (PMAs) was originally developed by Western's Upper Great Plains Region (UGP) as a means to provide a backup for its own aging commercial software packages in the 1990s. By 2000, however, UGP management had decided that the in-house backup would become the permanent production system, and it has been maintained and enhanced as a Government Off-The-Shelf (GOTS) solution since that time.

The SCADA component of the PCS constantly retrieves data from remote terminal units (RTUs) at substations and powerplants – the "data acquisition" function – and provides dispatchers with the ability to remotely control those devices through a graphical user interface on their personal computers – the "supervisory control" function. The AGC component uses scheduling information and data from the SCADA system to direct powerplants to produce the correct amount of generation from moment to moment, in real-time. In anticipation of the installation project, Southwestern upgraded RTUs at its substations and modified SCADA system components at several U.S. Army Corps of Engineers' powerplants to ensure compatibility with the new PCS.



A FEW OF THE SOUTHWESTERN, WYANDOTTE NET TEL (WNT) AND WESTERN EMPLOYEES ASSISTING WITH THE SUCCESSFUL SCADA CUT-OVER ARE (L-R): KIRBY DEVORE, NORMAN MCILRAVY, MONICA MIDKIFF, DANE DAWSON, DAVE SCHILDER, AND JOE MAYFIELD.



DISPATCHER SHELDON MCNIELL AND SUPERVISOR JIM CARNAHAN EXPLORE THE CAPABILITIES OF THE NEW SCADA SYSTEM.

The collaboration with Western began in 2003 when Southwestern sought an alternative to simply upgrading its then-current commercial SCADA package. "We decided to evaluate other SCADA systems when our commercial off-the-shelf vendor did not provide the cyber security posture we expected, nor was able to meet our changing functional requirements," says Katherine Thomas, Southwestern's Director of Information Technology. "In keeping with the intent of the President's Management Agenda for E-Gov, Southwestern decided to consider the SCADA systems in use at the other Power Marketing Administrations."

According to Thomas, Stan Mason, Southwestern's Director of Scheduling and Operations, recommended that the agency evaluate the GOTS solution developed at Western's UGP. Mason had previously worked as the Operations Manager for

UGP, and he and other Southwestern employees were aware that that system already incorporated some features that Southwestern's system needed to have. Compared to other alternatives, Southwestern determined that UGP's system would be more cost-efficient, easier for dispatchers to use, and more adaptable for any future modifications required by an ever-changing electric utility industry. A joint agreement was established between Western and Southwestern to adapt the PCS system for use at Southwestern, and to work together on future development and share system enhancements.

For both agencies, the financial benefit of the arrangement was immediate. "With the two PMAs working together, Southwestern's new system is not only customized for its specific needs but it has also avoided many of the costs associated with working with a commercial vendor," says Dave Schilder, Information Technology Specialist at Southwestern. Schilder, who served more than 30 years at Western, is one of the principal architects of the PCS and has been tailoring the system for use in Springfield. "Plus, having more people that are PCS 'literate' allows the two agencies to 'borrow' resources from each other if necessary," he adds, noting that Southwestern and Western can also cross-utilize features developed for or by either party. "Ultimately, the goal of the partnership is that both agencies can share costs as well as system enhancements," says Schilder.

Under the joint development agreement, both Southwestern and Western have the flexibility to modify the shared PCS to respond to emergencies or industry requirements, which serves to improve grid reliability as each agency shares its changes with the other. Southwestern will continue to perform project planning and software implementation management, while Western will implement the version methodology for any system enhancements developed between the parties.

Dean Graham, an Information Technology Specialist at Southwestern's Springfield Operations Center, notes that the "cut-over" process went very smoothly as the new system was put into production, which speaks well of the technical preparations of everyone involved. "I wish this project could be brought to light in the industry to illustrate the hard work and high skill level demonstrated by the Southwestern staff, as well as by Western, which would undoubtedly compare favorably to any utility or vendor team," he says. "Southwestern will be well-served with significant savings, great flexibility, and a high quality system for many years to come."

The partnership between Southwestern and Western has been a prime example of two PMAs finding a common solution for their individual situations. "Southwestern and Western made this happen in a real-world, business-like manner, working together efficiently to get the most benefit with the least costs, and with a minimum amount of red tape," says Mike Deihl, Southwestern Administrator. "I am very proud of the work we have done, and hope that future efforts between us and Western or the other PMAs can continue to provide additional shared benefits for the Federal hydropower program."



PREPARING THE NEW SCADA SYSTEM FOR THE CUT-OVER ARE (L-R): WNT'S KRISTINE DUNCAN AND MIKE PARIS, AND SOUTHWESTERN'S GREGG HAPPLE AND NORMAN McILRAVY.

Photo Credits: Gregg Happle

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