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Example of Excellence

Example: System Situational Awareness — Visualization of System Conditions
Entity: City Water, Light & Power
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A system operator must maintain an awareness at all times of where the system is operating relative to all limits. City Water, Light & Power of Springfield, IL (CWLP) utilizes PowerWorld Retriever for visualization of real-time system conditions and historical analysis of past events.

PowerWorld Retriever couples the visualization capabilities of PowerWorld’s one-line diagrams with the ability to observe real-time system conditions, including generator outputs, loads, transmission line flows, and voltage levels. PowerWorld Retriever allows CWLP operations personnel to view real-time animated one-line diagrams showing power flow conditions with flow directions, flow magnitudes, and voltage contours across the CWLP system. It also displays system generation power factor, system load power factor, and net system MW and MVAR interchange. The displays appear on front projection equipment, located in the control room.

In addition to the real-time display of system power flow and voltage contours, the application may be used to look at historical data by accessing the Plant Information software historical database. The PowerWorld Retriever tool provides planners and operators with a graphical visualization of historical system flows and voltage gradients. The tool permits the operators and planners to view historical system performance graphically and review the effectiveness of operator response to system conditions. In addition, this tool facilitates the comparison of actual system conditions to the planning models. It is even possible to make “movies” or snapshots of past system conditions for training and analysis purposes.

NERC commends City Water, Light & Power for providing a powerful system situational awareness tool to its operating personnel. The tool provides operating personnel an immediate visual assessment of system conditions to assist them in preserving the integrity of the bulk power system.