



Case Studies

Real World Success Stories

December 2000

WinMon Interface and Capacitor Controls Help KCP&L Stabilize System

The value of capacitor automation has been clearly demonstrated at Kansas City Power & Light Company (KCP&L) over the past two summers. EnergyLine's WinMon® Graphical User Interface and automatic capacitor controls are key components in their progressive capacitor automation program, which started in 1994 to support VAR and voltage regulation.

The KCP&L system is dependent on metropolitan area generation for system voltage control. Due to outages with this metropolitan generation and during peak loading periods last summer and again this summer, Transmission System Operators used the WinMon interface to issue a request to turn on all available distribution capacitors to support system VAR and voltage needs.

In August 2000, KCP&L set the highest system electrical peak for the current year. Transmission System Operators were concerned about projected low transmission voltage levels under peak conditions, as temperatures were expected to reach the mid to upper nineties with the heat index well over one hundred degrees. Consequently, they requested that all the distribution capacitors be switched on.

Using EnergyLine's newly developed query tool for the WinMon interface (see Figure 1), KCP&L was easily able to identify over 160 capacitors that were open. The query tool wizard leads users through the process. Users choose the type of control and

conditions in which they are interested (for example, VAR with Neutral Current controls with "CapBankState = OUT"). They can also choose to include other information in the query. The query tool automatically generates a list of controls meeting their criteria.

The new global command feature of the WinMon interface then let KCP&L quickly switch capacitors from their normal VAR/voltage strategy, to a strategy

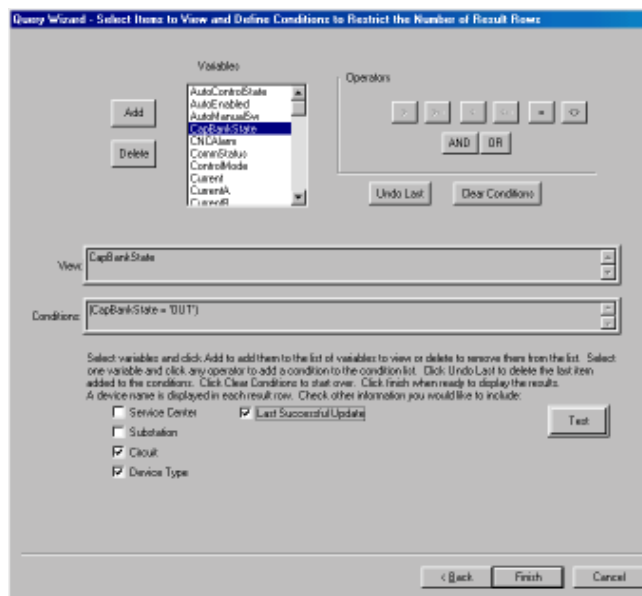


Figure 1.
The query tool lets users generate lists of devices with selected criteria.

which forces capacitors on while providing automatic voltage protection. Users can make a global change from any device of the same type. They select a new setpoint value as usual, as well as “Global” in the Change Value dialog box. Using the query results, they can then execute the global change in the Global Change window. If any problems occur (failed communications, wrong device type, etc.), the results are shown and logged. (See Figure 2.)

Although many of KCP&L’s off-line capacitors would have turned on later in the day as the load increased, capacitor automation allowed KCP&L to

switch them on proactively and supply needed VAR support before the peak loading period. As a result, the immediate system operating requirements were addressed and the service quality needs for KCP&L’s customers were maintained.

Bernie Beaudoin, Chief Executive Officer and President of KCP&L, stated, “The automatic capacitors gave us the needed advantage to better manage our system. There are many benefits as a result of our capacitor automation system, but perhaps most important is the fact that KCP&L customers continue to receive superior service quality for their homes and businesses.”

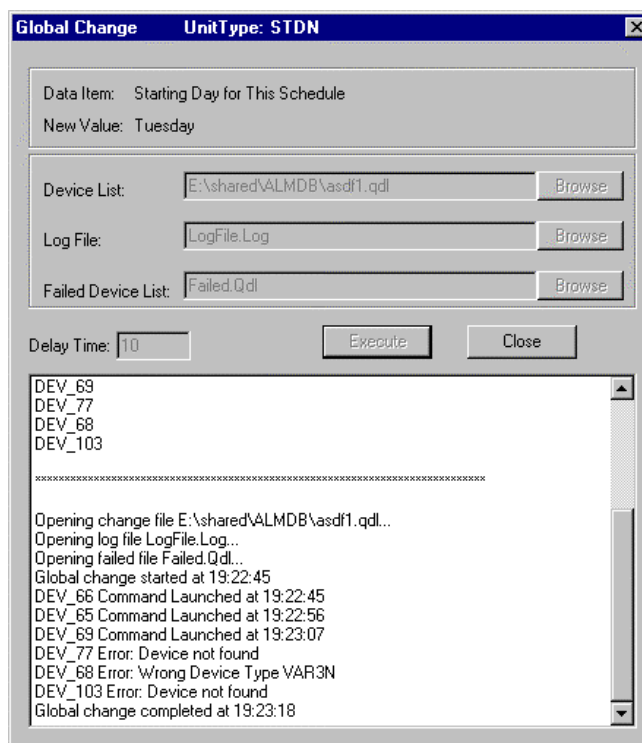


Figure 2.
The global change command simplifies making setpoint changes to several controls at once. The WinMon system logs any problems that occur.