

# Case Study

## Automated Alarm Annunciator for Substation Control Room

### Company Profile

This large regional power-distribution company operates below ground high-voltage electrical power transmission lines. They are responsible for safe distribution of power to their clients.



### Challenge

The traditional means of alerting control room operators is through annunciator panels. The alarms come in through a series of electromechanical relays. These relays are usually operated off 125VDC station power and are costly to wire and replace when failures occur. The operator does not know if a relay or lamp has failed so alarm conditions in the facility may go unannounced. Since these alarm relays are hard-wired, any changes to the alarm groupings requires a shut down and re-wiring of the relay panel.



### Solution

Rawson/Industrial Controls provided a GE PAC Systems RX3i automation system to replace the electro-mechanical relays in the system. The RX3i controller accepts 125VDC inputs directly, eliminating the need for interposing relays. To monitor the alarms, Rawson/Industrial Controls provided two licenses of GE Proficy Machine Edition View SCADA software. These HMIs are installed on industrial PCs and are located at the control panel as well as on the operator's desk.



### Results

The PAC-based automation system needs far less panel space, is fully programmable to allow changes in alarm strategy at any time, and provides self diagnostics so that operators are aware of any hardware failures that result in unannounced alarms. The HMI program allows multiple locations of alarm annunciation, providing redundancy and more eyes on problems. Unplanned outages have been avoided.