

Advance Energy, Australia SCADA System Upgrade

About the Customer

Advance Energy (AE) is an electricity distributor in Central West NSW. AE was formed by the amalgamation of five former County Councils in early 1996. AE services nearly 120,000 customers spread over an area of 167,272 square kilometres. The distance between our Head Office at Bathurst and our furthest Depot at Cobar is more than 500 kilometres. The area covered has some 45,000 kilometres of power lines and over 50 Zone Substations, some of which are in excess of 60 kilometres from the nearest AE depot.

At AE, Kingfisher RTUs are primarily used to monitor and log the status of various pieces of equipment in remote substations 24hrs a day. The types of equipment monitored include transformer loads, oil/gas quality, voltage levels, circuit breaker "trip on fault" status and overloading as well as many other equally important factors.

Most of the equipment in a Zone Substation are very expensive and there is often a long delay in obtaining replacements as they are manufactured on an "as required" basis. As such, early warning of impending problems is crucial to the quality and reliability of the power supply. Major problems can be avoided by having data at hand and being able to be pro-active rather than re-active to both hazardous and overloading situations.

Certain data collected, such as transformer loads, are archived and reviewed by system analysts to forecast growth and help plan ahead for future expansion of AE's distribution network.

As quite a number of AE's substations are located away from the large population centers and 95% are in towns, villages and cities remote from the company's 24hr Bathurst System Control Room, the need for a reliable means of monitoring is paramount. The company's System Control staff and field staff, are increasingly finding that by being able to ask the System Control staff to remotely change settings at Substations they are saving a great deal of time in their increasingly busy schedule.

The Challenge

When the five former distributors amalgamated in 1996, Advance Energy found themselves with four different SCADA platforms and seven different types of RTUs, one of which was the Kingfisher Series I & II RTU reporting to a Fix32 DMACS SCADA platform.

The challenge was to integrate all these different SCADA platforms and RTUs into one system able to be monitored at both of the new System Control Rooms at Bathurst and Dubbo. Advance Energy chose to continue using the Fix32 product largely due to its ease of adaptability to a Wide Area Network and to phase out the other SCADA packages that were in use.

One of the systems used 16 x 450MHz Tait 2000 Radios with five base stations and eight outstations. This system connected the Kingfisher Series I & II RTUs to the Master Station. The Kingfisher Master Station is then interrogated by the Fix32 SCADA node at Parkes. The data is then distributed via Advance Energy's Wide Area Network.

Customer Testimony

"Advance Energy was formed by the amalgamation of five former County Councils, each doing their own thing in SCADA, as well as many other areas. When the amalgamation process was well under way it became obvious that the many different SCADA platforms and RTUs that the new Advance Energy had inherited would create a great challenge to bring them together. It soon became clear to me that the various managers of the previous systems were faster on their feet than me because I got left with the job. At one instance I took delivery of a VAX Station and a plane ticket to a course on the system at the same time.

The only way I have been able to bring all the systems that I inherited together is by the strong support and the unending assistance of companies like RTU.net. RTU.net have supplied me with the technical assistance I have needed over the phone, as well as providing the on-site personnel with the experience, expertise and patience to assist in setting up the configuration of the Kingfisher RTU to suit our distribution network. And for that I would like to take this opportunity to thank them."

Jon Neville, Team Leader for Networks Automation & Controls for Advance Energy.

