

Aboriginal Communities



APPLICATION BULLETIN

A major thrust of the Australian governments efforts to lift the quality of life in remote aboriginal communities has been to improve the essential services provided. Especially this related to achieving dramatic improvements in water supply, sewerage and electricity. In WA this took the form of the RAESP (Remote Area Essential Services Provision) program, administered by ATSIC. In order to achieve more reliable power it was decided to fully automate the stations so that no local operator intervention was required apart from minor maintenance. An additional initial requirement was that the system used should have the facility for remote monitoring and control via phone lines. Greenbird Technology has supplied the equipment for the vast majority of these upgrades.



Typically these stations consist of three sets (occasionally four) each of a different rating.

Near the beginning of the program three community power stations were upgraded using standard IntelliGen hardware and WinEdit/MultiEdit software operating as MEXT systems.



Above right: An early power station control panel, which contains three IntelliGen controllers only

These trial installations were so successful that IntelliGen equipment has since been specified for a total of twenty three community power stations spread throughout Western Australia including the Kimberly, Pilbara, Goldfields and Great Sandy desert areas.

Above left: A later model upgrade using two new switchboard sections on the end of existing board containing three IntelliGen genset controllers, three Feeder Control Units and a Power Station Controller plus a PC running Winedit/MultiEdit and IG-LOG logging program

As the program grew Greenbird Technology and ComAp develop special new IntelliGen products and software in order to be able to meet increased requirements. The first item developed was a Power Station Controller which had two major functions, firstly to collect and bring into the overall control system all of the common data about the station such as bulk fuel tank levels, ambient temperature etc as well as binary inputs

for alarms etc. Secondly the PSC contains a program for set rotation based on the current load. This program chooses the most economical set or combination of sets to suit the current load profile and therefore ensures that sets do not run lightly (a previous problem) and also creates fuel consumption savings.

A new software branch was also developed for these power stations to add in some new features such as automatic derating for high ambient temperatures.



Left: A major new switchboard comprising three IntelliGen genset controllers (with space for a fourth), five Feeder Control Units and a Power Station Controller plus a PC running Winedit/MultiEdit and IG-LOG logging program.

In order to create a complete power station system Greenbird and ComAp also

developed a Feeder Control Unit (FCU), which provides automatic and manual operation of the feeder breaker, protection for the feeder and also full instrumentation. This unit is based on the IntelliGen hardware platform and is integrated into the CAN bus system and therefore all of the data and history etc is available in WinEdit.

As the systems were proven it was decided to increase the sophistication of the power stations and all of the later ones have PC computers installed on site running IG-LOG, ComAp's long-term data logging program.

The stations are monitored by the Regional Service Providers who are often located hundreds of kilometres from the communities. The ability to dial in using ComAp's WinEdit/MultiEdit software to monitor the sets and study history has saved many thousands of dollars in avoided tri[s] to sites.



Right: A novel solution where space was at a premium. An industrial, door mounted PC runs Winedit/MultiEdit whilst the controllers comprising three IntelliGen genset controllers, three Feeder Control Units and a Power Station Controller are mounted on the side of the cabinet.