

Freeport Indonesia Portside Power Station Blackstart Station

Industrial & Marine Electrics (IME) of Cairns have recently completed a major upgrade of the standby Blackstart diesel station at the Freeport Indonesia Portside coal fired power station.

The station consists of nine (9) CAT3512 powered 1000kVA sets and was installed in the 1980s. The customer wanted an upgrade of the system to provide greater reliability, a more sophisticated system and an external monitoring and control system.

The station has multiple functions including providing power to the port facilities in the event of loss of power from the main power station but it also acts as a black start power source for the main power station.



On each set IME installed an IntelliGen complete with a synchronising, load and VARs sharing module and a comms module. In addition an IntelliMains was installed to handle the reverse synchronizing to the main power station.

The compact nature of the IntelliGen controller made the installation of the controllers in the existing switchboard very simple and it was not even necessary to fabricate new doors.

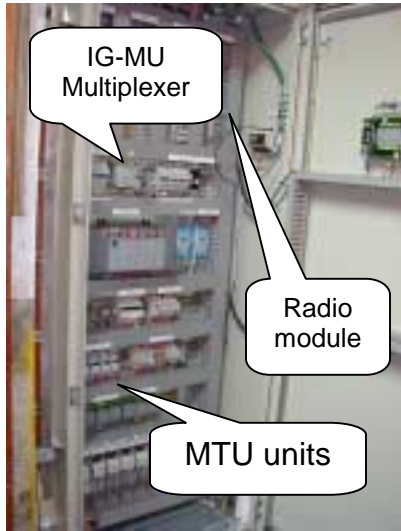
The job was extremely complex as the system is broken into 3 sections with tiebreakers in between and each section has to be able to operate independently or in combination with any other section.

This meant that the CAN bus would need to be broken at each tie breaker but the customer wanted a single MultiEdit screen for all sets so IME and Greenbird installed RS232/485 converters for each controller and converted these signals back to RS232 at the common point.



The blackstart application involves some complex switching, as the power has to be fed back up the power line to provide power to the main power station. Once the station is operating again this link is then broken so that the diesel station can be reverse synchronised to the main power station. A new IntelliMains cabinet was installed for the control of these operations. The Intelimains carries out the

whole reverse synchronising of the sets to the mains automatically. The customer has fitted a “chastity belt” on the IntelliMains



Another interesting feature of this installation is that the computer running the system is 3 km away and the only connection available was by radio. Due to the remote location, all of the comms, were set up and tested in Australia before being installed at site.

The whole system installation was very successful and IME’s commissioning engineer Graham Senini commented that “

Paul Emmerson, Greenbird Technology’s representative on site for commissioning recalled “It is nerve racking to be in a control room with over twenty of the customers staff when the lights suddenly go out for the final test of such a complex system and wait for the power system to come back up.”