

3MW POWER STATION

Project Overview:

The design is for a three generator power station utilising Caterpillar G3516LE engines powered by methane gas produced from Land Fill. The generator modules are designed to run in parallel with the Energex system generating up to a maximum of 1123kW per generator.

The system consists of 4 Allen-Bradley SLC5/05 PLC's and associated digital and analogue I/O. The PLC's are connected to Citect SCADA via Ethernet.

Automation IT was contracted to Develop, Test and Commission the Allen-Bradley PLC program logic and Citect SCADA system.



LANDFILL MANAGEMENT SERVICES

Details:

The total system consists of 400+ Real I/O and 1400+ SCADA Points controlling more than 48 devices including pumps, valves and fans.

The main functions of the Generator Module PLC's are:

- Starting and stopping of the generator
- Generator kW load control based on a set-point determined by the Station PLC
- Alarm annunciation
- Control and sequencing of generator module ancillaries :
 - radiator fans
 - module ventilation fans
 - gas delivery blower
 - gas conditioning system
 - module gas fuel isolation valve
 - fire protection system

The main functions of the Station PLC are:

- Requesting each Generator to start and stop
- Determine kW load set-point sent to the Generator PLC's
- Fuel gas monitoring
- Alarm annunciation
- Control of power station auxiliaries :
 - condensate knockout vessel pump

