

South Metropolitan Regional Council, Waste Recovery Centre

INTRODUCTION

SMRC is an umbrella organisation for 5 local councils in the Perth metropolitan area. As a group the local councils decided to try and greatly reduce landfill by converting standard household rubbish into compost. The councils selected a process from Bedminster Bioconversion Australia to break down the solid waste and turn this into usable compost

APPLICATION

A \$40M plant was constructed by Clough Engineering of Perth to turn the process into a fully functional operation. This plant required a large process control system to handle the thousands of process inputs from the material handling and bioconversion process. Four large (40m long) rotary digesters provided the main product processing. The contents of these digesters (solid waste mixed with treated sewage) is converted into raw compost over a 3-day period. After metal and glass separation, this product is transferred to a curing area where over a period of 28 days the product is aerated. After a final screening process, the end product is ready to be shipped out. The entire process is performed in a controlled environment within enclosed buildings.

SCOPE

- Create cause and effect matrix
- Design a Distributed Control System for the entire plant, capable of interfacing to more than 1300 physical I/O points
- Provide all design documents and drawings
- Supply and design redundant SCADA station.
- Manufacture all control panels
- Liaise with the MCC manufacturer
- Supply all process control equipment
- Commission the entire plant control system

EQUIPMENT USED

- Sixnet distributed control equipment (inc. 8 x CPUs, 178 x I/O Modules)
- Sixnet Ethernet Switches
- 6" colour touch screens for local control of Digesters
- Citect SCADA systems (x2)
- Temperature transmitters by S-Products
- Plant wide Industrial Ethernet network by Sixnet
- 2 x Complete Operator Workstations (inc. colour laser printers and 22" monitors)

END RESULT

The \$450,000 contract awarded to IA for this project was completed in time (6 months) and on budget. The Sixnet Linux based processors provide a high speed link to all parts of the plant with an amazing 250 ms scan time for the 20,000 tags that form this control system.

HIGHLIGHTS

The largest Sixnet based process control system in Australia

Local touch screen and central SCADA control of the process.

High-speed Plant-wide Ethernet Communications Network

Sophisticated energy management and control design