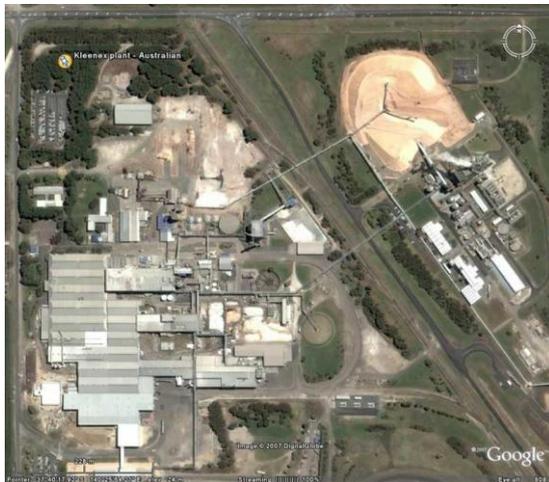


Monitoring capabilities assessment - Manufacturing Case Study

Introduction

Kimberly-Clark Australia & New Zealand (KCA) is a subsidiary of the US-based Kimberly-Clark Corporation. Headquartered in Dallas, Texas, with nearly 53,000 employees worldwide and operations in 37 countries, Kimberly-Clark posted sales of \$19.4 billion in 2008. Kimberly-Clark's global brands are sold in more than 150 countries.

Kimberly-Clark Australia employs over 1650 people and has annual sales revenue of approximately \$1 billion, the KCA paper complex in South Australia is their largest manufacturer, producing tissue and paper towel products, directly and indirectly providing 1400 jobs and contributing \$800m to the economy of the South East of South Australia.



KCA requirements

Kimberly Clark Australia (KCA) wanted to evaluate the upgrade of their energy management system so they commissioned us with the feasibility study of the implementation of an Energy monitoring system for their pulp mill and paper conversion facility in Millicent South Australia. The three specific areas addressed as a primary focus for the scope of the EMS system for KCA were:

- Monitoring energy resources and government reporting of the EMS system
- Reconciliation of accounts regarding electrical distribution of each of the site's asset centres
- Reducing the peak demand

Solution

Given the size (150 hectare) and complexity of the Millicent facilities (25GW per month split over 6 business units) an electrical distribution system audit was performed to:

- Identify all the current feeders onsite to enable the current tree structure of the organization's power and energy management system to be recognized
- Identify and single out the different types of meters that are present onsite - water, gas, electric, steam and air
- Identify all the current power monitors onsite and their capabilities
- Bring together the information obtained from the audit to present a EMS proposal for KCA

The Methodology used to perform this assessment was:

- Opening Meeting to collect documentation/drawings/contact details
- Individual meetings and discussion with energy source personnel for a further insight into each source
- Development of site asset centres and the metering required to reconcile their electrical distribution with accounting
- Meeting with site control system technicians to develop further ideas and a final scope/direction of the audit/proposal
- Reporting on audit findings and presenting report and proposal on a EMS system upgrade across the KCA sites

The physical inspection conducted encompassed the following activities:

- Identify the physical locations of the feeders and where the power monitors (PMs) will be physically located
- Determine whether primary and/or secondary current transformers (CTs) are present and their particular features
- Network connection/s to the power monitors - what networks nearby can be utilised or are currently utilised
- Obtain all documentation upon single line diagrams and processor systems for the sites
- Obtain the current start up/shut down operations and times of all machinery/lines

In order to determine the scope of the existing electrical distribution the following items of the existing system were inspected:

- All the asset centres with regards to their existing metering, cost allocation and electrical distribution calculation
- The sites HV Reticulation & Switching - Single Line Diagrams representing the feeder locations across the site and the general structure of power to machine centres
- Switchboards and the nearest patch panels for access to Ethernet data points

Conclusion

KCA paper complex in South Australia, the largest of their manufacturing facilities wanted to evaluate the feasibility of upgrading their energy management system. Based on the project brief we performed the assessment and provided a comprehensive feasibility study report identifying:

- All their existing monitoring capabilities and needs; specifying type, quantities and functionality of the existing and additional devices and materials needed;
- Management, configuration and onsite labour costs related with the implementation of the EMS;
- Specifications and cost of the hardware and EMS itself.
- Detail time schedule of the implementation activities