



Metering Project Case Study

Provider Name: *Kalki Communication Technologies Pvt Ltd*

Client Name: *Larsen & Toubro Ltd, Mysore Works*

End Client: *Neyveli Lignite Corporation*

Project Title: *Availability Based Tariff Energy Management System*

PART I: The Problem

The client manufactures Electronic Trivector Meters used in the electricity generation industry. Due to customer demand, supervisory software to monitor the meters remotely and provide energy management functions was required to be developed. Analysis and report generation features were required for billing. New government regulations required Availability Based Tariff functionality.

PART II: The Solution

Kalki developed a complete Energy Management System that met all customer requirements.

Description:

The solution was developed based on SCADA software as the platform. The system consists of redundant servers connected to the energy meters (approx 100) over an RS 485 based Modbus network.. 5 client workstations communicate with the servers over a fibre optic Ethernet LAN. The computers and energy meters are time synchronised with GPS signals.

The software provides mimic displays of the switchyard, detailed parameter screens of all data from the energy meters in real-time, trending of major electrical parameters, historical logging, alarming and other functions for routine operations of the system.

In addition, the system provides Availability Based Tariff functionality. Downloading of data from a hand held device is possible. Approximately 20 different types of reports are generated on hourly, shift-wise and daily basis.

A number of features that were not supported by the SCADA software were developed in VisualBasic and integrated with the system, developing custom drivers to communicate with the meters and the measurement handheld devices.

Technology Used:

SCADA software: Lookout (National Instruments, USA)

Protocol: Modbus

Architecture: Client/Server

Customised Modules: VisualBasic 6.0

Dates:

Start: 15 January, 2001

End: 15 April, 2001

Duration:

3 months

Location of work:

Development: Kalki Communication Technologies, Bangalore, India

Testing: Larsen & Toubro Ltd, Mysore, India

Deployment: Neyveli Lignite Corporation, Neyveli, India

Team Size:

SR No.	Role Title	Name	Yrs. Experience	% Involvement
1	Project Manager	Manikantan	10	75
2	Desing Engineer	Anoop Menon	3	100
3	Desing Engineer	Noby Jacob	3	100
4	Software Engineer	Santhosh Xavier	3	50
5	Software Engineer	Sreeni T S	3	50
6	Project Engineer	Sabapathy	3	100

PART III: About the Client

Larsen & Toubro Ltd is one of the largest engineering, manufacturing and construction companies in India. The Metering and Protection Systems division manufactures Electronic Trivector Meters for use in the electricity industry. Major customers for the meters include State Electricity Boards, and other utility companies in electricity generation, transmission and distribution. Due to the ongoing reforms in the electricity industry in India, the energy meter market has gained considerable importance and is growing at a rapid rate.