Case Study: Substation SCADA Engineering and Commissioning

Provider Name : KALKI Communication Technologies (P) Ltd.

Client Name : GE Fanuc India

Project Title : Power Plant Automation System

The Requirement

The client, required for their end customer project, Power Plant SCADA Design, Engineering and Commissioning Support. The project involved Power Plant Automation for a 11 MW captive power plant. The automation was carried out using CIMPLICITY 5.0 and GE 90-30 PLC. Kalki engineering and field services team, sat with the client team to understand the specifications and carried out the design, development, PLC field drawings, SLD creation and tag database creation, and commissioning and hand-over at site.

The Solution

The following Resources were utilized to carry out the Engineering and Design tasks:

1. GE Fanuc CIMPLICITY 5.0
2. GE 90-30 PLC
3. End-Customer specifications
4. Communication Topology and Interconnect details

The Power Plant was run on a fluidised Bed Boiler and involving a turbine for generating the 11MW power for the requirement of Bihar State Electricity Board. Kalki's role involves in designing and coding the control Philosophy (PLC Programming), SCADA development and Commissioning of the project. The SCADA used was CIMPLICITY. The system consisted of a Hot Backup Redundant (HBR) system along with a Sequence of Events Recorder (SER). The entire drawings, Engineering and Single Line Diagrams (SLD) and system configuration were carried out in the development center.

The PLC's were tested with the stated DI/AI/AO points and communication issues checked. The fully configured system was made available for Factory Acceptance Test (FAT) by the end-customer. After approval the system was shipped to site. At site, based on the detailed startup and commissioning plan, made an action plan to complete the CIMPLICITY implementation, field-wiring and loop checking as well as communication establishment and data integrity checking. These steps were carried site in the order of readiness of the different sites. Once these were completed, the system was ready for Site Acceptance Testing (SAT) and hand-over.

Tools Used:

- GE Fanuc CIMPLICITY 5.5
- GE 90-30 LM 90 tool
- NT Operating System Utilities for service management