Indonesian Utility chooses GE solution for major Automation of its largest substation

PLN-P3B, Indonesia’s state-owned electricity company selected GE Multilin Universal Relays with GE Energy IED Concentrator as a gateway to existing SCADA to provide an integrated protection, monitoring and control system.

February 28, 2006 Markham, Ontario CANADA - Cibinong substation is one of the most important substations in the Java-Bali transmission system, supplying electricity to Jakarta, the capital city of Indonesia and also one of the largest substations owned and operated by PLN-P3B. When PLN decided to upgrade its operation and reliability for West Java & Jakarta subsystems, PLN chose GAE-PT Guna Elektro to automate Cibinong substation by using GE Multilin’s Universal Relays.

GAE–PT Guna Elektro, a local system integrator and an Authorized GE Multilin Distributor and Value Added Reseller (VAR), was awarded a contract to do the installation, testing and commissioning that includes the integration of thirty-two Universal Relays, consisting of fourteen D60 Line Distance Management Relays, seven F35 Multi Feeder Management Relays, four T60 Transformer Management Relays and one set of seven B90 Bus Protection Relay Systems.

GAE implemented GE Multilin Universal Relay (UR) technology with GE Energy D20 as a gateway to existing SCADA to increase reliability and operability at the Cibinong 150 kV substation.
Cibinong Substation Automation

Automation system concepts includes LAN, gateways, PC based HMI, IED functions including Protection, SCADA, Metering, Power Quality Monitoring, Digital Fault Recorder, plus basic equipment monitoring provided by GE Universal Relay technology.

Using GE Energy D20 as an IED gateway, The Cibinong Substation Automation system is integrated to Cawang-Regional Control Center, which serves greater Jakarta area, and Banten. This integration allows the dispatchers at the Cawang Regional Control Center to monitor and control all equipment at the 150 kV Cibinong Switchyard remotely. The operators at the Cibinong 500 kV Substation Control Room can utilize GE Multilin’s Viewpoint™ Software to monitor and control locally, according to their responsibilities and access privileges. If the remote connection from either substation control room fails, the control functions can still be performed manually from an emergency panel located in the 150 kV Relay House.
Project Overview

The Substation Automation project was divided into three stages.

- The first stage of the project began on in 2003 for a 150 kV substation with 8 units D60, 4 units T60 and 5 units F35.
- Followed by the second stage project in 2004 for 70 kV substation with 6 units D60 and 2 units F35.
- Finally in 2005, 1 set of B90 (7 IEDs), which covered 20 CT's, and 4 Spare CT's for 150 kV Bus Protection was fully commissioned by local system integrator, GAE.

GAE has completed the installation, testing and commissioning of all three project stages.

Topology of Cibinong Substation Automation
The old panels and relays are replaced with much more compact panels and new UR Relays, which are connected to a fiber optic LAN in Cibinong Substation. User configurable Enervista UR Set Up software is used for remote settings or analyzing the system characteristics, event records or oscillography via computer in the control room or with the laptop in relay house. The Enervista Viewpoint™ software serves as the HMI software at the Cibinong substation Control Centre (500 kV Control Room), to allow remote metering, monitoring and control.

The New GE UR based Substation Automation Panels
About PLN-P3B
PLN is a state owned Electricity Company in Indonesia and PLN P3B is a Strategic Business Unit of PLN operating the 500 kV, 150 kV and 70 kV transmission line and load control centre for the Java and Bali islands. For more information, visit the website at http://www.PLN-Jawa-Bali.co.id or http://www.PLN.co.id

About GAE – Guna Elektro
GAE is an authorized GE Distributor and Value Added Reseller based in Jakarta, Indonesia, and has been in the Electrical, Mechanical and Telecommunication field for more than 40 years. It provides sales, installation, and support services to major utility, industrial and commercial customers throughout Indonesia. For more information, visit the website at http://www.GAE.co.id/power

About GE Multilin
GE Multilin, a division of GE Consumer & Industrial, is a global leader in the design, manufacture, sales and service of protection, metering, control and automation systems, as well as instrumentation transformers and telecommunication networks for utility, industrial and general industry applications. For more information, visit the website at http://www.GEMultilin.com

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