GE Multilin Inc.
215 Anderson Ave., Markham, ON, Canada L6E 1B3
Tel.: (905) 294-6222, Fax: (905) 294-2098
Email: mailto:GEMultilin@indsys.ge.com
Web Site: http://www.GEindustrial.com/Multilin

GAE Commissions First Fully Automated Substation for Indonesian Utility Using GE Multilin and GE Energy Services Equipment

Universal Relays Connected to SCADA System for Protection, Monitoring and Control

Markham, Ontario – August 19th, 2002 – Indonesia's state-owned electricity company, PLN-P3B (PLN), is using Universal Relays from GE Multilin along with a GE Energy Services D20 ME to automate operations at its Cirata 150kV sub-transmission substation. GAE - Guna Elektro, one of the country's most experienced systems integrators, was responsible for the installation and commissioning. This milestone project marks PLN's first fully automated substation project, which is helping increase reliability while also providing remote monitoring, protection and control through a Wide Area Network (WAN).

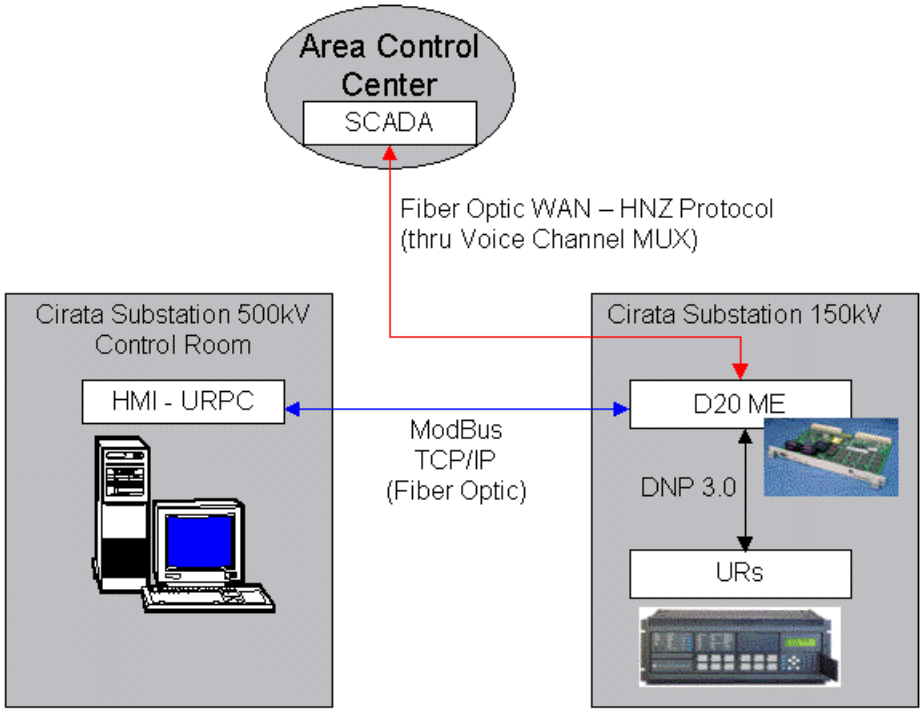
Since the end of year 2000, the Cirata Substation had been operating under emergency conditions with the substation's panel and control room being housed in a temporary location. To return operations and reliability to normal for the Bandung Raya and Purwakarta subsystems, PLN chose to rehabilitate the substation with an automated system using Universal Relays (URs) from GE Multilin.

Substation Automation at Cirata

UR technology provided protection, monitoring and control through a single system, eliminating the need for a dedicated operator in the substation control room. The system was integrated with the West Java Area Control Center in Cigelereng-Bandung, using a GE Energy Services (Harris) IED Gateway to convert DNP 3.0 protocol to HNZ protocol used by the existing SCADA System.

The Cirata Substation

The communications channels allow the monitoring and process control of equipment at the 150kV Cirata switchyard to be done remotely by the dispatchers at the Area Control Center or by operators at the Cirata 500 kV Substation Control Room (using URPC software), 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 Substation Control Room. Basuki Prajitno, General Manager of PLN-P3B, commented at the recent inauguration of the Cirata Rehabilitation project that, ”PLN-P3B has pioneered the utilization of the Automated Unmanned Substation (known by PLN as GITO) within the overall PLN system in Indonesia.” The completion of this project marks PLN’s first fully automated substation connected to the West Java Area Control Center.



Project Overview

Local system integrator GAE completed the installation of the components, and will support the nine URs now operating in the 150 kV Cirata substation as part of a relaying system pilot project using URPC software. The contract includes the purchase of 4 D60 Line Distance Relays, 2 T60 Transformer Management Relays, 2 F35 Multiple Feeder Management Relays, 1 B90 Busbar Protection System and the GE Energy Services D20 ME as the IED Gateway and Data Concentrator. Eddy Wahyudi, West Java Regional Manager for PLN-P3B commented that, “This new Universal Relay technology exceeds PLN’s basic operational needs for protection, control

and monitoring, and provides excellent fault analysis capability (DFR)."

The Universal Relay-based substation automation panels

This new equipment is part of an overall substation automation initiative that will utilize an existing fiber optic Wide Area Network (WAN) to integrate all relays throughout the entire Cirata Substation Power System. WAN communications are based on TCP/IP protocol. User configurable URPC software serves as the HMI software at the Cirata Substation Control Center, to allow for remote setting, monitoring and control. This software provides users with a graphical representation of UR relay activity on the network.

About PLN-P3B

PLN is a State Owned Electricity Company in Indonesia. PLN-P3B is a Strategic Business Unit of PLN covering the 500 kV, 150 kV and 70 kV transmission line and load control for the Java and Bali islands, supplying a total of 13 Gigawatts of electricity. For more information, visit the website at http://www.PLN-Jawa-Bali.co.id or http://www.PLN.co.id

About GAE – Guna Elektro Group

GAE is an authorized GE Multilin distributor and Value Added Reseller (VAR) based in Jakarta, Indonesia, and has more than 40 years experience in the field of electrical, mechanical and telecommunication. GAE provides sales, installation and support services to major utility, industrial, and commercial customers throughout Indonesia. For more information, visit the website at www.GAE.co.id

About GE Energy Services:

GE Energy Services, a division of GE Power Systems, delivers the solutions needed to safely, reliably, and cost-effectively automate critical transmission and distribution assets. We offer top quality hardware and software solutions, as well as on-site installation and project engineering

services, customer-tailored to help you meet your automation goals. GE also provides complete solutions to support substation automation programs, with migration into distribution automation.

About GE Multilin:

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

About the UR:

GE Multilin UR products are microprocessor-based solutions that support the open standard EPRI UCA™ MMS/Ethernet protocol. All UR products combine peer-to-peer high-speed communication capabilities with modularity, flexibility and field-programmable FlexLogic™ control for simplified substation automation. UR products include the B30 Bus Differential Relay, the B90 Bus Protection System, the C30 Controller, the C60 Breaker Management Relay, the D30 Line Distance Relay, the D60 Line Distance Relay, the F35 Feeder Protection Relay, the F60 Feeder Management Relay, the G60 Generator Management Relay, the L60 Phase Comparison Relay, the L90 Line Differential Relay, the M60 Motor Management Relay, the T35 Transformer Management Relay and the T60 Transformer Management Relay.

For Further Information Please Contact:

Christine Krokker
Manager – Marketing and Sales Support
GE Multilin
905-201-2192
christine.krokker@indsys.ge.com

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