



Substation Control & Automation

INCREASING NETWORK VISIBILITY FOR UTILITIES

Unforeseen power outages or remote access problems can cause significant loss of productivity and revenues to utility companies. With more than 40 years' experience in the design and supply of electronic equipment for managing electrical networks, here at GE Power Conversion we offer a range of innovative and reliable substation control and automation solutions to facilitate the management of electrical networks, safely and cost effectively.



SUBSTATION CONTROL

We supply highly robust substation control solutions to utility companies across the world for the purposes of monitoring and control of electrical power generation, transmission and distribution.

GE's **Supervisory Control and Data Acquisition system (SCADA)** transmits and receives data through GE's range of T5000 remote terminal units (RTU) which interface with critical equipment on the monitored network in the substation.

Subview HMI – provided by an industrialised PC in the substation environment - allows authorised personnel the ability to visualise and control the network on-site.

To help maintain reliable operations, we have designed into our substation control systems a wide range of operator features and security options to ensure that only permitted safe operations occur, backed up with full traceability of action and system events. Additionally, the system utilises the Windows® operating system making it easy to update, as and when the network evolves.

REMOTE TERMINAL UNITS (RTU) AND PROCESSORS

- **T5000 RTU** - GE's T5000 family of RTUs provides a cost-effective solution for installations where electrical systems need to be reliably monitored and controlled. Designed with particular reference to the requirements applicable to equipment that needs to work reliably and accurately in electrically noisy environments, such as an HV substation.
- **T5500 Processor** - At the heart of the T5000 Remote Terminal Unit (RTU) is the T5500 Processor module which includes a comprehensive range of interfaces to provide the facilities and connectivity required in electrical substations.

TRANSMISSION SUBSTATION AUTOMATION

Automatic Reactive Switching (ARS) for Optimum Efficiency

In a transmission substation environment, GE's Automatic Reactive Switching (ARS) system maintains the network system voltage at a selectable target level by automatically switching reactive plant in and out of service. Following a fault, for quick response to stabilise the system, GE's ARS operates automatically (within certain pre-defined limits) to ensure that the system voltages do not collapse. Networks covered are typically: HV @ 400 & 275 kV and LV @ 132 & 66 kV. GE is the only supplier to have a type registered Automatic Reactive Switching (ARS) for use by National Grid.

Automatic Tap Change Control (ATCC) Eliminating Plant Cabling

GE's Automatic Tap Change Control (ATCC) system is presented in an Intelligent Electronic Device (IED) format, on a PC hardware platform. GE's ATCC automatically regulates system voltage to compensate for load variation, circulating MVAR and other system variables. Integration with ARS, provides reactive compensation by means of tap stagger (the mechanism used to regulate circulating MVAR in the substation) when network issues arise. ATCC uses the site Substation Control System (SCS) as a plant interface, i.e. the source of plant status data and also as an executor of controls. This eliminates the requirement for duplicate plant cabling as the ATCC requires no direct connection to plant.

Accreditations and Certification IEC61850 Certification

T5502 Mini RTU Processor
T5500 Primary RTU Processor



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