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Substation Automation Handbook

Comprehensive description of Substation Automation and the coordination with Network Operation to obtain both performance and cost benefits by enabling enhanced Power System Management



Substation Automation Handbook

Over the past decade the electricity supply industry has been subjected to dramatic changes. World-wide the trend is to restructure vertically integrated utilities catering for generation, transmission and distributions into smaller “unbundled” companies. The new plant owners are pushed to minimize costs through greater utilization of assets. This new operation philosophy is enabled by the rapid advances, which are made in the field of digital technology applied for protection, control and communication. These developments drive significant changes in the electric power system management, broadband communication and substation automation.

Substation Automation (SA) systems play the role as key success factors for advanced power system management performing all the local tasks in the substation like data acquisition from the power grid via the switchgear and the activation of changes by commands to switchgear like circuit breakers, isolators, transformers etc. in a decentralized structure. These functions are conducted by dedicated intelligent electronic devices (IED) for control, protection, disturbance recording, condition monitoring, automatics and communication.

The purpose of this Substation Automation Handbook is to provide comprehensive knowledge of all the aspects involved with SA and to bridge the gap in mutual understanding between those readers, who are well experienced with the mana-

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