

Power Management System

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Abstract

Power management system is a term coined to illustrate the three sub components – power/energy management system, relay monitoring system and breaker management system. The objectives of the above are achieved thorough SCADA system which uses a proprietary processor, its peripherals, OT & IT networking components, proprietary software to acquire the data and powerful dashboards & mimics to gain insights as well as control the power network remotely without compromising on cybersecurity. Energy meters are installed and measure the power quality parameters – voltage & current harmonics other than the voltage, current, frequency, power, energy & power factor parameters and calculate the total harmonic distortion. These data provides insights regarding the power quality (voltage profile, harmonics, voltage & current unbalance) for subsequent actions (capacitor bank charging, tap changing, installing harmonic filters, load balancing etc.) Numerical relays collect the fault data from the relays and aids in fault analysis and subsequent relay coordination. Circuit breakers can be controlled remotely. The tripping & closing coils of the breakers can be actuated from SCADA. It aids in network re-arrangement & restoration, fast load shedding (in case of generating unit outages), safe remote breaker operations and controlling idle loads.

Keywords

SCADA, network management, power/energy quality management, relay monitoring and load shedding.

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Biographies

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