

2 Differential Protection for Phase Shifting Transformer

Toshiba has supplied a control and protection system for a Phase Shifting Transformer (PST) for TransGrid's 132kV network in Australia. The system, which is due to commence operation in December 2008 at the Armidale 330kV substation, includes Toshiba's GRT100 Transformer Differential Protection applied for protection of the PST and accommodating phase shifts of up to 30 degrees. GRT100 supports 3-winding transformer differential protection with integrated restricted earth fault protection, overcurrent back-up, thermal overload and over-excitation protections. Extensive fault simulation and RTDS testing in the factory confirmed the correct operation and high performance of the protection prior to shipping.



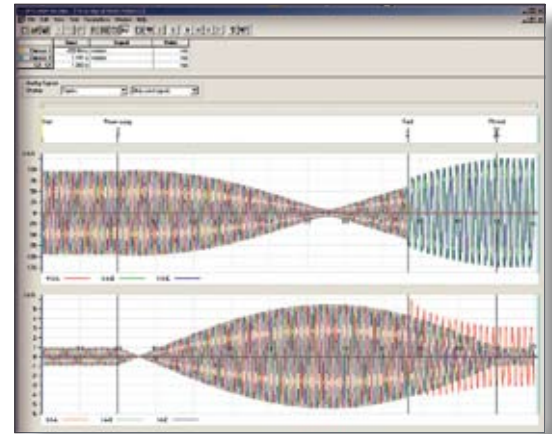
3 User Friendly

Transient Simulation Testing Tool

OMICRON electronics' transient network simulation software NetSim allows testing of relays under close to realistic conditions using a numerical network model to simulate processes in an electric power network composed of voltage sources, lines, circuit breakers, fault instances and switching events. It is a user friendly simulation and testing tool that provides predefined network topologies with default data called test cases,

such as two or three terminal lines and double circuit lines with mutual coupling. It can be used to simulate simple, simultaneous, evolving

or cross-country faults of different types, locations and fault inception angles, as well as synchronous and asynchronous out of step conditions.



4 New Busbar Protection System



ABB introduces a new high-speed substation busbar protection system for utility and industrial power systems using reverse interlocking. The busbar protection application is based on the company's REF615 feeder protection relay with native support for the IEC 61850 standard and its GOOSE services. This smart grid-enabled relay offers a platform to advance the performance, reliability and cost effectiveness of the power systems of tomorrow and beyond.

Compared with traditional hard-wired inter-relay signaling, relay-to-relay communication over a switched

Ethernet LAN offers an advanced and versatile platform for protection, software-based configuration, continuous supervision of the integrity of the protection and communication system, and inherent flexibility for reconfiguration.



IP Access Multiplexer

5

RFL Electronics Inc. has introduced the eXmux 3500 - a substation hardened IP Access Multiplexer engineered to seamlessly transport Voice, Data, and Ethernet communications over Ethernet networks, providing the flexibility of backward compatibility with legacy devices and forward compatibility with IP devices on the same communications platform.

The eXmux 3500 Access Multiplexers combines TDM multiplexing and IP into one simple to use substation hardened platform. It eliminates the need for costly managed switches, legacy multiplexers, and high end SONET solutions, eliminating the need for dealing with the issues of migrating legacy products to modern TDM networks.

6 Feeder Management IED

AREVA's MiCOM P145 feeder management relays provide an integrated solution for the complete protection, control and monitoring of overhead lines and underground cables, covering distribution and transmission voltage levels applications. Integrated communication protocols include IEC61850 and allow easy interfacing to substation control or SCADA systems. A wide range of advanced protection functions make it suitable for application on various networks - from solidly grounded systems to more specialized systems using Peterson coil. Front panel user function keys replace control scheme switches, thereby reducing engineering and wiring costs. Tri-color programmable LEDs provide a cost-effective solution for full feeder scheme applications.



7 Sub-cycle Distance Relay with automation and control capabilities

GE Digital Energy's enhanced Multilin D90Plus protection system is a single-platform solution for the protection of MV to EHV transmission lines. The Multilin D90 Plus is a sub-cycle distance relay delivering maximum performance, flexibility, and functionality. It achieves the fast sub-cycle distance protection using true CCVT filtering for improved

performance without the need for intentional delays or reduced fault coverage. Featuring advanced automation and control, dedicated digital fault recording, comprehensive communications including IEC 61850, and an extensive local HMI, the Multilin D90Plus represents the next benchmark in protective relaying.



8 new Capacitor Bank Protection and Control IED model BCV

ZIV introduces the new Capacitor Bank Protection and Control IED model BCV that combines voltage or current unbalance protection with current, voltage, and frequency protection functions.

The integrated automatic bank switching function saves costs and panel space.

This relay includes all the features of the field proven "V series",



such as revenue metering accuracy of 0.1% with 32 samples per cycle; convenient hardware features as unpluggable rear

connectors and front panel USB port; flexible communication options with standard DNP3.0, Modbus, peer to peer serial, and

optional IEC 61850; plus a powerful and easy to use logic module for custom protection and control functions.

9 Automatic Fault Location and Data Collection Software

Siemens Energy introduces SAFIR – the Siemens Network Fault and Power Quality Analysis System.

This tool can automatically collect transient and power quality data in the Comtrade format from the devices at the substation - protective relays from different manufacturers and digital fault recorders - automatically cluster all data related to a particular event, generate an easy to understand report, and even calculate the fault location.

All data are stored in a database and can be easily accessed via Intranet, Internet (if desired), text message and other media. The system will reduce the down time quite significantly and quickly pays itself off.

