To provide a highly reliable HVDC scheme, a highly reliable control and protection system is required. Siemens introduces a new and most modern control and protection technology (Win-TDC*) for the HVDC project BASSLINK (Australia). This state of the art technology is configured in a hot standby redundant topology. All control and protection components have been upgraded to take advantage of the latest software and hardware developments.

- These control and protection systems are based on standard products with a product life cycle for the next 25 years.
• **Use of Standard Products**

The PC based standard HMI system **SIMATIC Win CC** (Windows) is used. This system is also widely used for a lot of industrial applications round the world.

**SIMATIC TDC**, an industrial standard hardware design, comprises the Station Control, the Pole Control, the DC-Protection and the Measuring systems.

This latest development in the Siemens family of Programmable Logic Controllers has replaced both the SIMACTIC S5 and SIMADYN D in HVDC control and protection applications. The high speed system SIMATIC TDC enables a larger integration of control and protection functions while maintaining redundancy.

Fast interface and handling by using the Windows based HMI system with functional blocks.

More than 250 tested and well proven Standard Function Blocks are available.

• **Fast Transient Fault Recorder Diagnostic**

A new transient fault recorder system (TFR), ibaScope, is also introduced. It provides data acquisition with high sampling frequencies for excellent resolutions. This windows based system operates with a download time of less than 10 seconds which allows a fast troubleshooting.

• **Real Time Digital Simulation for the performance verification**

To achieve the very high reliability and dynamic performance by reducing the On-site tests the Win-TDC system is tested with a Real Time Digital Simulator. Comprehensive functional and dynamic performance tests were successfully carried out to verify the correct behavior under real time conditions. These intensive offsite tests minimize the need for live transient network tests.

• **Remote Access**

Customer support by Internet connection including data security, a VPN (Virtual Private Network) encrypted connection is optionally offered.
Main Features of Win-TDC:

- Future oriented technology for HVDC Applications with a product life cycle for the next 25 years

- Very high availability due to complete redundancy at all levels with "Hot Standby" feature

- All Control and Protection Systems use the same well proven standard Hardware / Software (64bit RISC CPU, parallel operating system)

- Graphically configurable, >250 standard function blocks HMI using windows based, SIMATIC-standard operating system WinCC

- A fully redundant Win-TDC Control and Protection System has been thoroughly tested for a monopolar HVDC-Scheme with a Real Time Digital Simulator

- Flexible Interface systems make Win-TDC also the solution for HVDC Control and Protection refurbishment projects. In addition the existing or new measuring equipment are easy to integrate.

Please contact us for detailed information: PTDH1Mailaktion@erls04.siemens.de

Preview of the "HVDC / FACTS Highlights 07/03":

Siemens -
Your long-term committed partner

The Guizhou-Guangdong Transmission Project in China, (3000 MW)