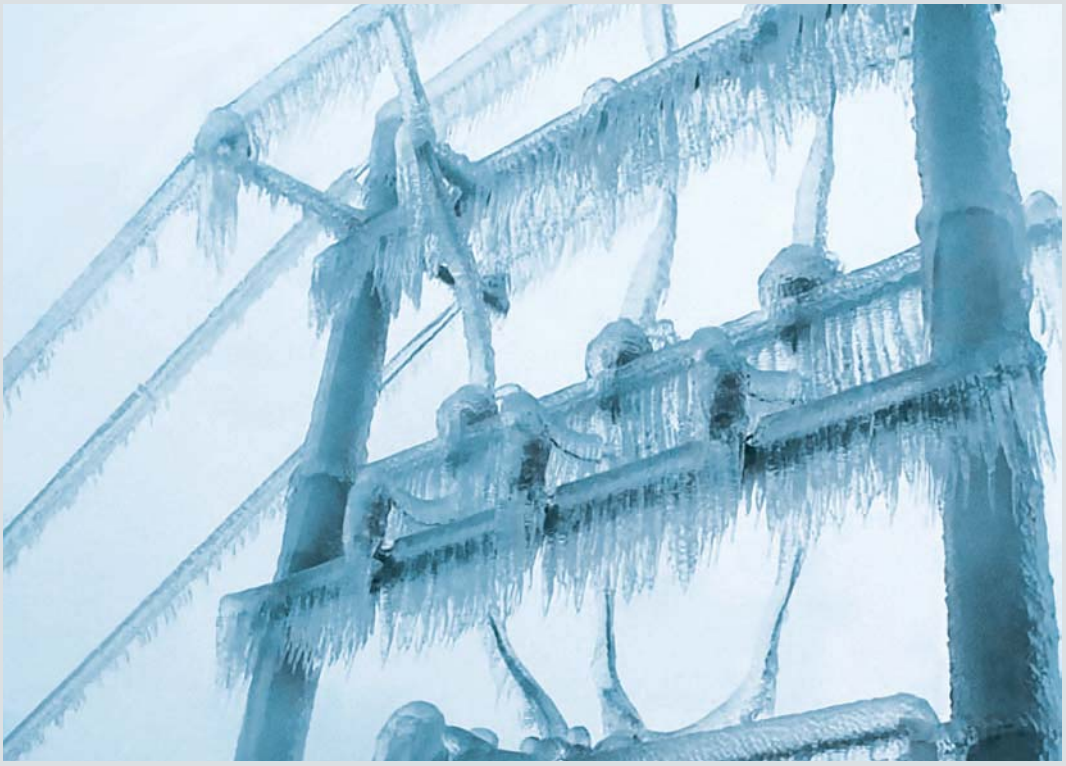
Greater reliability for southern China

115° east, 25° north



Facts about the project:
Siemens had only three months to deliver and commission a reliable, high-capacity protection signaling system for the province of Guizhou in southern China.

The onset of winter saw massive power supply disruptions. While there is no guaranteed immunity from natural disasters, steps can certainly be taken to mitigate their effects – and that is exactly what the Guizhou Power Grid Company did. It is a subsidiary of the government-run China Southern Power Grid Company, and its 20 million-kilowatt grid makes it one of China's biggest energy suppliers.

Guizhou Power Grid Company, China

Answers for energy.

SIEMENS

Guizhou Power Grid Company, China

The challenge:

In January 2008, southern China was ravaged by one of the worst blizzards in the last 50 years. The storm destroyed large areas of agricultural land, damaged streets, disrupted railroad connections, and brought down overland transmission lines. Several cities in Guizhou and neighboring provinces suffered power outages. Downed OPGW and ADSS lines and the malfunctioning of numerous HF protection transceivers in the 220-kV grid caused additional problems.

To be better prepared for such disasters in the future, the Guizhou Power Grid Company contracted Siemens to install a backup system for protection signaling. It chose reliable PLC-based technology because it can be maintained even in extreme weather conditions. To ensure the future reliability of the power grid, the contract signed in September 2008 stipulated that the new system would have to be ready for operation within three months, just before the onset of the winter season.

Our solution:

The PLC solution from Siemens covers 15 links with 30 substations each and includes PowerLink 50 W with an integrated SWT protection signaling system. This technology supports both voice and protection signaling transmission, while also complying with the IEC 60495 standard. It can also process both analog and digital signals. The Automatic Crosstalk Canceller makes sure that the transmission is optimized at all times. The transmission power can be matched exactly to the requirements of a given line. Since the bandwidth is variably adjustable, optimal use of the transmission capacity is guaranteed. In addition, the integrated teleprotection system ensures simple connections and cost efficiency.

The success of this project was influenced by both the cutting-edge technology and the "soft" skills of the partners involved. The willingness to engage in two-way communications, with an emphasis on listening, and taking the time to understand problems and solve them as a team, made it possible to complete the project in December 2008, just before the start of winter. Compliance with the very ambitious schedule was also due to the close collaboration among the various Siemens departments involved, including headquarters, the regional offices and the local distributors.

For Guizhou, the project provides clear advantages in terms of reliability. Potential grid malfunctions can now be detected, identified and corrected much more quickly, even in remote regions and areas located beyond the province's borders.

At the Guizhou Power Grid Company, the high quality of the technology and the project management were met with overwhelming approval and led to further PLC assignments in 2009. Plans for the second grid modernization phase have already begun. In addition, the use of PLC even in 110-kV grids is being considered, too. Other provinces have also expressed interest in PLC, with several energy suppliers already appraising the Guizhou solution as a possible model for one of their own projects.

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