SIEMENS

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Energy Sector
Power Transmission Division

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Siemens builds gas-insulated high-voltage line for hydropower plant in China
Total tube length 3.2 kilometers with 200-meter long vertical sections

Siemens Energy is constructing a gas-insulated high voltage line (GIL) with a total tube length of 3.2 kilometers for the Chinese hydropower plant “Jinping I” in the Liangshan Yi district of Sichuan province. Siemens is installing three three-phase GIL systems, each with a length of 350 meters, as a link between the machine transformers in the power plant cavern and the high voltage switchgear for connecting to the overhead line. The 305-meter high dam wall of the power plant is the highest structure of its kind in the world. As a result, the GIL has to bridge vertical sections about 200 meters long, which necessitated special design. The high voltage transmission system can transmit 3500 MVA of power at a voltage of 550 kilovolts (kV). The order was placed by Ertan Hydropower Development Company, Ltd., Chengdu. The GIL is scheduled to go into operation in mid-2012.

In hydropower plants, large amounts of energy have to be transmitted from the machine transformer inside the dam wall to the high-voltage switchgear on the surface. Due to their high performance gas-insulated transmission lines are particularly well suited for this. Furthermore they pose no fire risk in the power plant tunnel. The GIL systems for the “Jinping I” hydropower plant are designed for power capacities of up to 3500 MVA and currents up to 4000 A. “With our GIL technology, large amounts of power can be transmitted very efficiently even where extremely limited space is available, like in this hydropower plant. We are thus supporting the creation of sustainable energy systems in China with this project too", stated Udo Niehage, CEO of the Power Transmission Division in the Siemens Energy Sector.

GIL technology is a further development of tube conductor technology. A gas-insulated extra-high-voltage line consists of an aluminum conductor tube and an aluminum enclosing tube. The GIL is suitable for connecting load centers and urban and industrial centers over a transmission length of

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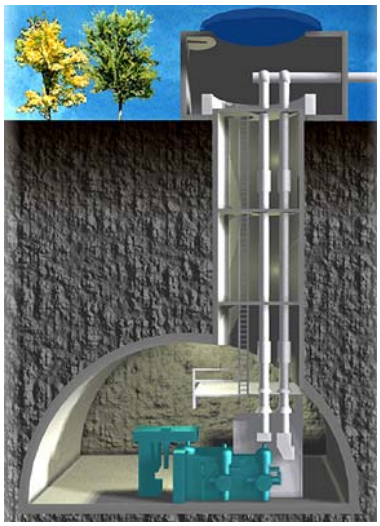
a few kilometers as well as for longer distances. No measures are required for reactive power compensation, and transmission losses from a GIL line are lower than for cables or overhead lines. GIL lines can be routed over any terrain, including steep inclines or vertical sections, and GIL technology is especially suitable for laying underground or in tunnels over short transmission lengths. Gas-insulated high voltage power lines are an important feature of Siemens' environmental portfolio. In 2008, revenue from the products and solutions of Siemens' environmental portfolio was nearly EUR 19 billion. The environmental portfolio is growing 10 percent annually; the revenue target for 2011 is EUR 25 billion.

The **Siemens Energy Sector** is the world's leading supplier of a complete spectrum of products, services and solutions for the generation, transmission and distribution of power and for the extraction, conversion and transport of oil and gas. In fiscal 2008 (ended September 30), the Energy Sector had revenues of approximately EUR22.6 billion and received new orders totaling approximately EUR33.4 billion and posted a profit of EUR1.4 billion. On September 30, 2008, the Energy Sector had a work force of approximately 83,500. Further information is available at: www.siemens.com/energy.



Siemens press photo

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Caption:

Siemens Energy is constructing a gas-insulated high voltage line (GIL) with a total tube length of 3.2 kilometers for the Chinese hydropower plant "Jinping I" in the Liangshan Yi district of Sichuan province. Siemens is installing three three-phase GIL systems, each with a length of 350 meters, as a link between the machine transformers in the power plant cavern and the high voltage switchgear for connecting to the overhead line.

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