

Erlangen, January 31, 2019

Siemens technology stabilizes power grid in the Rhine-Main area

- **State-of-the-art reactive power compensation systems from Siemens are supporting the power supply for the industrial city of Frankfurt.**
- **The transmission systems for grid operator Amprion have been successfully running in test operation since the end of December 2018.**

Commissioned by grid operator Amprion, Siemens built two reactive power compensation systems for the important Kriftel power grid node: a mechanically switched capacitor with damping network (MSCDN) and a power-electronic static synchronous compensator (STATCOM). The systems have been running successfully in test operation since December of 2018. They're able to dynamically, rapidly, and flexibly increase or decrease the grid voltage on demand, which is necessary in order to keep the grid stable despite the increase in fluctuating power supplies from renewable and distributed energy sources. At the same time, the system will help prevent gaps in supply due to large power plant shutdowns. The Kriftel substation between Frankfurt and Wiesbaden controls power distribution for the Greater Frankfurt Area and its almost six million inhabitants.

Powerful IGBT modules

Siemens also built its first advanced power modules in Kriftel. These IGBT power transistor modules can supply more power than predecessor modules, which means that fewer modules are required for the specified control range than it was formerly the case.

Most powerful SVC PLUS system in Europe

"We're pleased with the successful test operation of what is so far Europe's most powerful SVC PLUS system, which we've supplied to our customer, Amprion, on a

turnkey basis,” says Mirko Düsel, CEO of the Transmission Solutions Business Unit in the Siemens Energy Management Division. “Static VAR compensation systems based on our SVC PLUS technology are highly advanced and are also ideal for flicker compensation, integration of wind power plants, or railway electrification.” Amprion awarded the order in early 2016.

Availability far above 99 percent

The core of SVC PLUS, an advanced STATCOM, is its multilevel converter technology. By contrast with other self-commutated converter topologies, the voltage waveshape produced by SVC PLUS is practically sinusoidal by virtue of the multilevel technology. This makes the low-frequency harmonic filters often used in earlier solutions superfluous and substantially reduces the space requirements for the overall unit. The average availability of a Siemens SVC PLUS system far exceeds 99 percent. Siemens is a world leader in the field and has received orders for more than 100 SVC PLUS systems worldwide.

Background

Alternating-current electricity transmission requires reactive power, which is typically provided primarily by large power plants. Due to the energy transition, many of these plants in Germany have been shut down – which is why grid operators like Amprion are responding by installing reactive power compensation systems. Reactive power supports grid voltage during long-distance large-scale power transmission. These large electricity transports are necessary when wind power from northern Germany is needed in its industrial south. By using reactive power, the grid voltage can be increased or decreased and electricity can be efficiently transmitted.

This press release is available at

<http://www.siemens.com/press/PR2019010128EMEN>

The press release about the order in 2016 is available at

<https://www.siemens.com/press/PR2016020138EMEN>

For further information on Division Energy Management, please see

www.siemens.com/energy-management

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