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Changes for the Better

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FOR IMMEDIATE RELEASE **No. 3584**

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Mitsubishi Electric Receives Order for ±700MVA STATCOM Aimed at Stabilizing Power Grid in Northeast Japan

Will strengthen control of diversified power grid for expanded use of renewable energy sources

TOKYO, March 28, 2023 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that it has received an order for a static synchronous compensator (STATCOM) rated at ±700MVA, the world's largest capacity class, from Tohoku Electric Power Network Co., Inc., which is headquartered in Sendai, Miyagi Prefecture. The STATCOM is expected to be operational by the end of 2031.

The ongoing introduction of renewable energy generation in northeastern Japan's power grid will contribute to carbon neutrality, but will also make it more difficult to maintain a stable power supply. The new system will be installed at the Iwate substation in Morioka, Iwate Prefecture to help stabilize synchronization whenever a power system failure occurs due to bulk power transmission.

STATCOMs are devices that control and stabilize power voltage in a power system by instantly providing reactive power.[1] Mitsubishi Electrics' STATCOM supports power-oscillation damping and harmonic[2] voltage suppression based on technologies that have been optimized through extensive testing. The company's advanced technologies and well-proven track record of global supply in this field led to its STATCOM being selected for use at the Iwate substation, which plays a significant role in northeastern Japan's power grid.

Product Features

1) Top-class capacity will support power-oscillation damping during system failures

- The STATCOM's top-class capacity of ±700MVA will support power-oscillation damping and the maintenance of grid voltage by immediately producing reactive power to restore the system if a failure occurs.
- The STATCOM has a dead zone in which it does not respond to voltage changes to prevent reactive power output under steady-state conditions, thus enabling coordinated control with existing phase-regulating equipment in the power system and the reduction of STATCOM operational losses.

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1 Power produced by the STATCOM that is used to stabilize voltage fluctuations, but is not actually consumed

2 A waveform with a frequency that is an integer multiple of the sine wave of the commercial frequency, which distorts the waveform of the fundamental wave and adversely affects electric circuits and electrical equipment in the house

2) Japan's first[3] Active Filter[4] for harmonic-voltage suppression to maintain electric power quality

- Detection of system-voltage harmonics supports adjustment of active filter control parameters to help optimize and maintain electric power quality.

Power grid systems are becoming more complex and sophisticated due to the increasing incorporation of renewable energy sources for carbon neutrality. Mitsubishi Electric is committed to supporting power-grid stabilization in regions worldwide and contributing to greater convenience and safety through the use of stable electricity.

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About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 4,476.7 billion yen (U.S.$ 36.7 billion*) in the fiscal year ended March 31, 2022. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥122=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2022

[3] As of March 28, 2023, according to Mitsubishi Electric's research into the same class of STATCOM

[4] Function for detecting harmonic voltage and output voltage in order to cancel harmonics