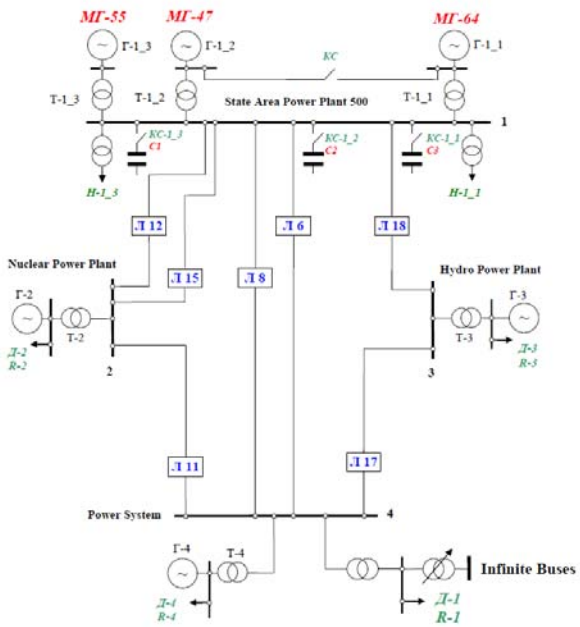
Russian Market Certification Achieved for the “THYRIPOL®” AVR

After extensive testing at the “High Voltage Direct Current Power Transmission Research Institute“ (Abbrev. “NIIPT”) in St. Petersburg, Russia in October 2011, the static excitation system “**THYRIPOL®**“ from SIEMENS received approval for the Russian market.

The tests were based on one of the approved test programs from the Russian System Operator UPS (United Power System of Russia) and were performed within the scopes of two current projects, namely: Yaiva and Serovskaya.

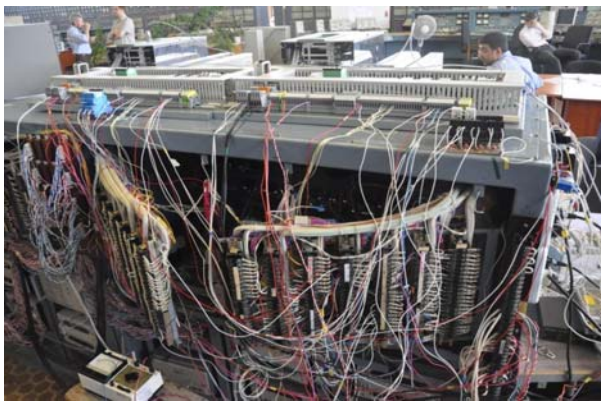
The approved and released test program from the Russian System Operator includes numerous test scenarios (over 80 individual tests), which cover all of the presently known Russian power grid constellations regarding power generation and its distribution. The tests were based on the following grid constellation, see Single Line Diagram below.



The Institute NIIPT has an electro-dynamic model on site, set up in test-size scale, including live generators, mechanical drives and power transmission elements such as transformers, overhead lines and reactive power compensators.

Machine Shop at the NIIPT Institute

At the institute two voltage regulators of type THYRIPOL® from the static excitation system were connected to the electro-dynamic model (Generator 47 and 64) using an especially for the test modified hardware interface.



Connection of the Voltage Regulators

Based on the function of both the automatic voltage regulator and the Power System Stabilizer (PSS), the static and dynamic behavior was studied at different operating conditions of the generator including various grid failures (e.g.: a three-phase short circuit in close proximity to the power plant). The Institute NIIPT evaluated and published the results in a very detailed report. In accordance with ST6B and PSS2B, the automatic voltage regulator of type THYRIPOL® was released for use for the Russian power grid. ST6B/PSS2B are models from the IEEE Standard 421.5-2005, which show the Voltage regulator i.e. Power System Stabilizer, and are used in the analysis of grid stabilization.

With this successful certification of the SIEMENS excitation system THYRIPOL® our customers are assured to receive clearance by the Russian System Operator to feed into the Russian power grid.

Special thanks go to Prof. Dr. Kutzner at the “Fachhochschule Hannover” for his active support in making this project a success.

- Uwe Seeger, SI EN EEG 4