

Master Thesis

In Kooperation mit Andritz Hydro



Investigation of parallel operation of rotating phase shifters and STATCOMs

Initial situation and motivation

Rotating phase shifters (Synchronous Condenser) are increasingly in demand by transmission system operators for dynamic grid support (short circuit power, flywheel power, reactive power). A new trend is the combination of STATCOMs with rotating phase shifters.

Research question(s)

The objective of the thesis is to work out how to optimally combine the behavior of a rotating phase shifter compared to a STATCOM in a hybrid system.

Procedure/methodology/task

The first step is to investigate how the behavior of these two technologies differs in the ms to seconds range (fault ride through, rate-of-change-of-frequency, voltage dips, etc.). Based on this, a sensitivity analysis will be used to determine the influence of the ratio of the rated apparent power of the Synchronous Condenser to the STATCOM on the dynamic behavior of the hybrid system in terms of short-circuit power, flywheel mass, reactive power.

The investigations and modeling will be performed in Digsilent Powerfactory software.

Organizational

The work can be started at any time.

Contact person/supervisor

DI Darko Brankovic

Co-supervision within Andritz Hydro

