Institute of Electrical Power Systems

Bachelor Thesis

Calculation of voltage-reactive power diagrams of generation plants

Motivation

In the current grid connection codes, the voltage / reactive power behaviour at the grid connection point is prescribed for generating plants; this is usually located on the high-voltage side of the block transformer. For the generating plant itself is usually the performance diagram is given, thus real power over reactive power, parametrized with voltage. In order to check compliance with these connection codes, these diagrams must therefore be converted accordingly.

Research Topics

In this work, certain P / Q limit curves are to be converted to U / Q limit curves at the grid connection point. For this purpose, these limit curves are to be analyzed first, the most important influencing parameters to be determined and it is a choice for standard parameters to make, if not all details are known. Thereafter, the limit curves are to be converted to the grid connection point and displayed

Procedure/Methodology/Task definition

- Analysis of various limit curves and identification of the main influencing parameters (eg under excitation curve of synchronous machines, performance limits of wind turbines, ..)
- Implement the curve into an existing Matlab tool at the institute
- Check the results using load flow calculations

Organisational Issues

Begin immediately

Contact Person/Supervisor

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