Application of Rotary Phase Shifter as Power Compensator for Wind Power Generators

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Abstract

The renewable energy resources depend on the natural condition and are difficult to be considered as a stable power source. Moreover, the renewable energy plants tend to be distributed on the demand side and they are difficult to be governed at the central control station. So, the improvement of stabilizing and compensating distributed power system are required to realize the stable power operation.

This paper describes the effort of application of The Rotary Phase Shifter (hereinafter called RPS), which is an phase shifting equipment based on the induction machine technique, as an compensator for the power fluctuation of renewable energy resources, such as wind power stations.

We reported on the IERE workshop in Zurich its basic theory and the possibility to improve stabilizing power system which has unstable power source through computer simulation last year

This paper reports the further study of RPS carried out in the other year. The 50kVA prototype is manufactured and connected to the small size power grid with wind turbine simulator of MG set in our factory. The performance of the RPS system is reported through the test result of the above test facilities. Moreover, computer simulation is improved through the performance test. It is also reported in this paper.