Technical Investigation for Power System Flexibility

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Abstract

Power systems face growing flexibility requirements for managing the increased penetrations from variable renewable generation (VRG) like solar and wind power generation. In general, instant balance of temporal inequalities between supply and demand can be reached by many flexibility options. However, an accurate quantification of the flexibility needed and available in a power system is a complex task. Accordingly, this paper introduces a review of various power system flexibility metrics that used to quantify the flexibility. The use of these metrics varied, some of which were used to measure the flexibility available from each conventional generator and others were used to measure the flexibility available and needed by the power system at both the planning and operational stages, but up till now there is no flexibility metric that can be taken as a standard.

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