Evaluation of enhancements to Thevenin equivalent based methods for real-time voltage stability assessment - DTU Orbit (14/01/2019)

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The possibilities offered by the use of Phasor Measurement Units (PMU) in real-time monitoring provide interesting ways to ensure secure operation of power systems. This paper studies the specific case of voltage stability and the possible improvements to the Thevenin equivalent methods, which is applied generally with local measurements. This paper uses the PMU measurements to calculate the grid transformation coefficients to obtain wide-area information. This is achieved by studying the generator's electromotive force estimated using values in the coefficient transformation matrix. The improvements are tested in a small system and a through comparison with traditional Thevenin equivalent methods is carried out.

General information
State: Published
Organisations: Department of Electrical Engineering, Center for Electric Power and Energy
Contributors: Perez, A., Jóhannsson, H., Østergaard, J.
Number of pages: 5
Publication date: 2014

Host publication information
Title of host publication: Proceedings of 5th IEEE PES Innovative Smart Grid Technologies
Publisher: IEEE
Keywords: Equivalent circuits, Phasor measurement units, Voltage Stability, Power system stability, Real-time assessment, Long term dynamics
DOIs: 10.1109/isgteurope.2014.7028805
Source: PublicationPreSubmission
Source-ID: 101465149
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014