

An Optimized Fast Voltage Stability Indicator

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Summary

This paper proposes a simulated annealing optimization technique for optimal voltage stability profile throughout the whole power network. The technique is applied to control the power elements of major influence on the voltage stability profile. Elements such as generator reactive generation, adjustable shunt compensation devices and transformer tap settings are optimally adjusted to reach the objective of minimizing the voltage stability index as well minimizing the global voltage stability indicator. Because of the optimal setting of the control elements, the maximum possible MVA voltage stable loading has been achieved and a the best voltage profile was obtained. Results of tests conducted on a 6-bus system are presented and discussed

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