Optimal Power System VAr Planning

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Summary

A technique is presented for planning the future reactive power requirements of a power system. The problem is formulated as a mathematical optimization problem based on a linearized power system model. An efficient dual simplex linear programming technique coupled with relaxation and contingency analysis is used for solution. The approach reduces the dimensionality of the problem significantly, thereby allowing for more rapid calculations and more case studies to be performed. The effectiveness of the scheme is demonstrated using the IEEE 30-bus and IEEE 188-bus systems