

Method of searching for the limiting operation conditions in a given controlled section.

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The article presents method of searching for the limiting operation conditions in a given controlled section. The developed method is based on the optimization procedure. The objective function is the sum of active power flows along the transmission lines included in the section. Equations describing the steady state are set as constraints. The Jacobi matrix determinant is assumed to be zero. A distinctive feature of the proposed method is the search for the limiting state in a given section, but not in general in the power system. Among the advantages of the proposed method, one can note the absence of the need to specify a definite mode change vector. The method was applied for 3-node and 4-node networks and showed its efficiency. The article confirms the theoretical possibility of using the method, but further research is required for full use.

Key words: electric networks, electric mode, marginal state of electric power system, optimization, weak section.