FUZZY ECONOMICAL DISPATCH OF ALL THERMAL POWER SYSTEMS; TRANSMISSION LINE LOSSES ARE INCLUDED

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Abstract

The basic objective of economic dispatch operation of power systems is "the distribution of total generation of power in the network between various regional zones; various power stations in respective zones and various units in respective power stations such that the cost of power delivered is a minimum." In the cost of power delivered, the cost of power generation and transmission losses should be considered. This paper presents a novel technique to solve the economic dispatch problem of all thermal power systems, where the system states and control variables are considered fuzzy which is the case in reality. Formulas for the middle and spread of power generation and transmission losses as well as for fuzzy incremental fuel cost are derived. These fuzzy formulas are solved at different degrees of fuzziness and the results are reported in the text of the paper.

Keywords: Economic dispatch of all power systems, fuzzy systems, loss formula.