

Design of a Load Frequency Control based on a Fuzzy logic for Single Area Networks

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Abstract:

In interconnected power system of single area network, the generator unit provides a power to various feeding consumers during time. Consequently, the generating frequency varies over the time when the connected load of the consumers changes. In this paper, the single input fuzzy logic control (SIFLC) is proposed to restore the operating frequency to its desired value under various states. This SIFLC is the simplification of a fuzzy logic control (FLC). The signed distance method is used for deriving single input FLC that reduces the two-input FLC to a single input. Therefore, the rule table forms from one dimensional piece wise linear control surface. The MATLAB/SIMULINK platform is carried out to validate the control actions of SIFLC and FLC. Simulation results prove that the response of SIFLC is more efficient compare to conventional FLC to the same input sets. In addition, the it requires less tuning effort and its execution time is less compared with the conventional FLC.