عنوان مقاله:

Set-up and location of the fault current limiter (fcl) in power systems by fuzzy HFL sorting algorithm and optimization pso HIGA

نویسندگان:

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خلاصه مقاله:

As the number of new power plants and the scale of transmission systems sustainably grow, the probability of exceeding the short circuit rating of circuit breakers (CBs) increases, a fact which leads the system's security and stability to a big issue. Fault Current Limiter (FCL), as one of the solutions to current surge attenuation, attracts a lot of attention from utilities. To make the best use of FCL, the placements must be optimally determined along with the most suitable FCL parameters settings. This paper proposes a method combining Hierarchical Fuzzy Logic System (HFLS) method for pre-sorting the feasible solutions and Hashing-Integrated Generic Algorithm (HIGA) as an optimization tool to find the best solution in the reduced search space. To verify the proposed approach as an effective means for placement of the FCLs, the proposed method is implemented through Mat lab and Dig SILENT and tested in a practical power system. The numerical results show that the proposed method may achieve a better solution in less time with fewer placements of FCLs, thus reducing the cost, while maintaining comparable system security.

کلمات کلیدی:

Short-circuit Current, Generic Algorithm, Voltage Stability, FCL Placement Optimization