عنوان مقاله:

Hierarchy Style Application in Line Extension with Responsive Loads Evaluating the Dynamic Nature of Solar Units

محل انتشار:

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خلاصه مقاله:

This paper presents a model for line extension scheduled to participate in responsive loads in the power system aiming the improvement of techno-economical parameters. The model is studied with the presence of photovoltaic generators that produce variable power depending on the geographical condition. The investment cost of the transmission expansion plan, demand response operation cost, generation costs and the sum of the voltage deviations are the four indices that the optimization problem is designed based on these four criteria. Objective functions are dynamic variables that change daily due to variation in generation and load. A multi-objective optimization method based on the analytic hierarchy technique is employed to solve the problem. The Pareto-optimal set is extracted with gravitational search style and the best solution is fund by AHT manner. Studies are carried out on the modified ۳۰-bus and ۲۴-bus IEEE test system to confirm the capability of the presented model. Two frameworks are defined to compare the suggested manner. A different amount of PV penetration is discussed in several scenarios. .Also, load uncertainty is formulated and involved based on probability distribution function

کلمات کلیدی:

Planning, Responsive loads, Photovoltaic unit, Analytic hierarchy technique