عنوان مقاله:

A New Integer Linear Programming Approach for Multi-Stage PMU Placement

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خلاصه مقاله:

Nowadays, by increasing the utilization of phasor measurement units (PMUs) in power system, it is clearly expected that the PMUs play a vital role in smart transmission grid. In the reality, power systems are large scale, accordingly, financial limitations (due to PMU cost) and technical problems are impeding installation of all the required PMUs in a short time. Therefore, the PMUs are usually installed in several time stages. This paper proposes a novel multi-stage PMU placement approach based on integer linear programing (ILP) for the sake of power system observability enhancement in horizon years. In this approach, PMUs are chosen from predefined locations for all stages in a single optimization process, dependently; while the conventional methods use a subsidiary independent optimization process for each stage. The proposed approach is conducted on IEEE standard test systems as well as Iranian 230- and 400-kVtransmission network. Finally, in order to verify the efficiency of the proposed method, the obtained results are compared with those of previous researches

کلمات کلیدی:

Multi-stage planning, Integer linear programing, Network observability, Optimum placement, Phasor measurement unit (PMU)

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