Optimum Placement of Phasor Measurement Units Considering Communication Feasibility based on Geographic Information System

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Abstract:

Phasor Measurement Units (PMUs) using Global Positioning System (GPS) have created a great change in operation of power systems. By utilizing PMUs, the state estimation, reliability and stability in power system are expected to be improved. Optimal placement of phasor measurement units in this article to complete Visibility Power Khuzestan along with the feasibility wireless power transmission network using GIS geographic information system (GIS) was used. In this paper, objective function based on integer linear programming (ILP) to determine the optimal number and location PMU is presented. The algorithm also uses GIS PMU optimum location for the main and auxiliary wireless communication towers and the number of transmitter / receiver set screw. Simulation results show that the electric power transmission network can be Khuzestan PMU 19 and 53 number system monitoring and control communications tower.

Keywords: Phasor Measurement Units, Optimal placement, Visibility, geographic information system,Line Of Sight