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With the rapid increase of photovoltaic (PV) systems installed in power systems in the recent years, the negative impacts on power quality of distribution networks due to highpenetration PV systems can be increased. This paper presents the system-impact analyzed results of a 0.6-MW PV system connected to one of the substations of Peng-Hu Power System, Taiwan though a feeder. The steady-state characteristics of the PV system on the studied system are analyzed under different output powers of PV inverter, various capacities of neighboring loads, and voltage variations of the swing bus using the simulation software of EMTP-RV. The simulated results indicate that the voltage deviations at the point of common coupling (PCC) can be well maintained to meet the grid code of Taiwan Power System under various operating conditions.

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