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## Abstract:

Solar power stations worldwide have been rising every year as well as the usage of sustainable power has increased. The addition into the traditional electricity grid networks of renewable sources such as the photovoltaic (PV) system is an essential challenge, given its erratic power generation. The major issue is to detach PV from the faulty grid, which leads to fluctuation in the system's interconnected PV system and system-wide energy interruptions. The low voltage ride through (LVRT) enables the PV scheme should stay linked to the grid even under fault situations in short periods and must assist the grid return to regular situations according to the modern grid codes. Hence, this paper develops and analyzes five aspects of control strategy to increase PV station's LVRT capability. The in-depth simulation of the independent units of the grid-connected large-scale PV farm is accomplished using PSCAD/EMTDC to assess the feasibility of the suggested control tactic for the modified IEEE nine-bus system.

**Keywords:** hybrid power system, low voltage ride through (LVRT), PV station, three line-to-ground (3LG) fault.