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Power Quality Enhancement for Small-Scale Hydropower Plant using SVC

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Abstract: *Unlike the generators in large hydro power stations, which operate in voltage control mode, the generators in small hydro power stations (SHPs) are forced to operate in power factor control mode due to their limited reactive power support. In fixed power factor operation, smaller variations of voltage at the evacuation bus are managed by on load tap changing at the generator transformers. One of the biggest challenges facing the world today is to provide access to a safe and affordable electricity supply. Depending on the river flow, small-hydropower is often a cost-effective source of renewable energy. This research shows the voltage compensation & reactive power incorporation for the micro hydro power plant using the facts device SVC. This paper pertinent for enhancing power quality by control of voltage what's more, recurrence of a confined smaller scale hydropower era. The complete electromechanical framework is displayed and reproduced in MATLAB utilizing Simulink and Sim-power framework piece set.*

Keywords: SVC, Small hydro power plants (SHP), power quality improvement

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