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## ABSTRACT

Micro-Hydro Power Plants (PLTMH) have been built in some countries in Indonesia as alternative ways to generate electricity for any regions which have no electricity from PLN. Electric energy generated by PLTMH are commonly used for loads such as electric motors, lamps, heaters, etc. This consumption will result in some power components appear, these are active power, reactive power and harmonics so the efficiency will be poor and finally the amount of power that used by the people will be smaller. In this research a device called current compensator is installed in parallel connection to the system to recovery reactive and harmonic power component. This compensator will inject current components that force the generator only supply active power component. This condition will increase the efficiency. The core of a current compensator is power converter that is implemented by high speed static switches. They are controlled automatically to adapt the real condition. Analysis and laboratory experimental works are done to validate.

**Keywords :** *active power, reactive power, harmonics, compensator*