

ABSTRACT

With the current technological developments and the potential for electrical generator, especially in the water resources, small-scale power plants are being developed, one of it is the Micro Hydro Power Plant (PLTMH). PLTMH is the alternative electrical gainer that can be developed in countries that have wide-spread water resources, such as Indonesia. However, there are several problems that cause PLTMH to not be able to operate optimally, one of the problems is that the water flowing from the dam to the intake is sometimes unstable due to uncertain rainfall factors.

The sluice gate in many PLMH has still been using manual systems operation, it has a human to open or close it , which in this case sometimes makes mistakes in decision making. The author's solution to this problem is to create an automatic the sluice gate system, so that when the water discharge conditions at the excess intake or less, the sluice gate will open and close according to the required water discharge automatically. Measurement of water discharge using a water flow sensor, the result of reading the sensor will be forwarded to the actuator (DC motor) as the drive. In this final project the author will design the sluice gate control system using the Fuzzy Logic method.

Based on data that gained by the research, the system was oscillated. But, its approaching the set point value. Its seen when researcher test the water debit at 3l/m set point, the response of the system was steady state at water debits range 2.92l/m - 2.95l/m. And when the researcher test at 3.5l/m set point, the response of the system was steady state at water debits range 3,44 l/m - 3,47 l/m

Key words : PLTMH, Water Flow Sensor, the sluice gate, Fuzzy logic