

ABSTRACT

The waste treatment process at Lengkong Village is currently still using waste treatment methods in the Final Disposal Site. Landfill is getting less and not a few landfills will be closed so that it needs a waste treatment process with other methods, one of them is by processing waste in place with burning. Incinerator is a waste burning device with a certain temperature usually with a temperature between 600 °C to 1200 °C so that it can reduce the initial volume of waste. Exhaust gas from the incinerator combustion must have passed the exhaust emission test so that it is safe for the surrounding environment. By burning waste using heat that is high enough, the incinerator is expected to be used as a producer of water vapor by heating water in the boiler and the results of water vapor will be used for waste power plants.

In this final project, a water level control system in the boiler is made. This system will be equipped with a DC water pump that can be controlled by PWM with Fuzzy Logic Controller (FLC) because this control does not use mathematical calculations and uses human language to define existing conditions so that it is more practical. If the incinerator can be used as a producer of water vapor other than as a waste burner to reduce the volume of waste, the yield of water vapor can be used for the needs of a waste power plant.

Based on the results of the design and implementation of Fuzzy Logic Controller on the water level control system, the system in this final project can go to the desired water level setpoint and be able to adapt if the sensor readings are disturbed. From the initial height of the water to reach the desired water level of 15 cm with a settling time of 617 seconds. In addition, water vapor produced in this final project is ± 2.5 bar.

Keywords : Trash, Incinerator, Water Vapor, Full System, Fuzzy Logic