

ABSTRAK

Limbah cair PT PJB UP Muara Tawar adalah salah satu limbah yang berpotensi menimbulkan pencemaran bagi lingkungan khususnya air. Unit Waste Water Treatment Plant (WWTP) merupakan salah satu cara PT PJB UP Muara Tawar untuk mengelolah limbah cair hasil produksi. Wastewater treatment dilakukan dengan cara mengatur kadar nilai pH pada limbah air. Nilai ideal dari pH air yang ingin dicapai adalah 7. Oleh sebab itu diperlukan sistem yang dapat mengendalikan pH pada unit WWTP.

Pengendalian kadar nilai pH pada unit WWTP dilakukan dengan menggunakan sistem kendali Hybrid Controller HC900. HC900 tersebut akan dirancang sebagai kendali utama proses wastewater treatment. Pemograman kendali HC900 menggunakan Function Block Diagram (FBD). Sistem kendali terintegrasi dengan sistem Human Mechine Interface (HMI) untuk tampilan simulasi maupun pengawasan sistem. HMI pada sistem menggunakan perangkat lunak SpecView.

Dari hasil perancangan model sistem, diketahui bahwa HC900 mampu digunakan sebagai sistem kendali utama pada unit WWTP. Pengendalian pH menjadi peran utama dalam proses wastewater treatment. Kendali HC900 menambahkan konsetrat HCl dan NaOH, agar air limbah mampu mencapai kondisi ideal. Integrasi HC900 dengan HMI mampu memberikan tampilan yang sistematis, sehingga mendukung dalam pengawasan.

Kata Kunci : Wastewater treatment, WWTP, pH, Hybrid Controller, HC900, SpecView

ABSTRACT

PT PJB UP Muara Tawar waste water is one of waste that could potentially cause pollution to the environment in particular. Waste Water Treatment Unit (WWTP) is one of the ways PT PJB UP Muara Tawar to manage wastewater product. Wastewater treatment is performed by way of regulating the levels of pH value on waste water. The ideal values of the pH of the water to be achieved is 7. Therefore required a system that could control the pH on the unit of WWTP.

Levels in units of control ph values on WWTP were done using a hybrid of a controller HC900 in this control system. HC900 will be designed as the main control of wastewater treatment process. HC900 using Function Block Diagram (FBD) as program. Integrated control system with a system of Human Mechine Interface (HMI) to overlay or supervision of simulation system . HMI on a system using Specview as software.

According the results of a model system design, be seen that HC900 capable of being used as a main controller on wwtp unit of. pH control become a main role in this process of wastewater treatment . Control HC900 added concentrate HCl and NaOH, to obtain waste water on ideal condition. Integration with the HMI, HC900 able to provide systematic display, and so support in supervisio.

Key words : Wastewater treatment, WWTP, pH, Hybrid Controller, HC900, SpecView