

ABSTRACTION

Tersana Baru sugar factory, located in Cirebon under consolidation of PT Rajawali II sugar factory is one of many sugar factories in Indonesia facing any complication in line of production and now trying to restructurize the rehabilitation of system as it is based on Sugar factory revitalization proclaimed and funded by government. Since it was established on 1937, with an occupied resource of a 4.384 Ha terrain in Babakan village West Java, Tersana Baru sugar factory is yet using exactly the same old machine as it first handed. Nearing obsolete machine state, manual controlling and monitoring with a high possibility of human errors, are some causes of declining in sugar production.

Tersana Sugar factory owned 6 main work station, one of them called evaporation work station, designed to evaporate sugar juice. Manual system implemented in this workstation. Operator needs to keep an eye on temperature and sugar juice level condition in importance to keep the sugar extract and thickness in good condition or appropriate standard. The possibilities of human errors and high working load intensified in a decline of the quality of sugar juice.

An advance solution to *held back* the complication in Tersana Baru sugar factory evaporation work station is to implement an automated system based on PLC (Programmable Logic Controller) and HMI (Human Machine Interface). The implementation of this automated system enables an easier control in Tersana Baru evaporation workstation.

This automated system designed to be able to automatically adapt with the condition in the workstation. Basicly, an addition of PLC and actuator sensors functioned as controller also an HMI as the eye in the monitoring system suits well.

This research provided an automated system in Tersana Baru sugar factory evaporation station. This system works with an integration of monitoring, supervising and controlling, also real time data acquisition helps to decrease technical errors an operator work loads.

Keywords: Sugar, Evaporation, HMI, PLC, automation.