ABSTRACT

Orthodox dark tea milling process is the most important process in Orthodox dark tea production process because it distinguished between Orthodox dark tea with CTC one. In the milling process to produce black tea powder 5 types of tea, powder type I, type II, type III, type IV, and badag. Rancabali garden, as one of the orthodox black tea production owned by PT. Perkebunan Nusantara VIII, who was presented to increase the volume and quality production. In the other hand, controlling of the technical stipulation parameters of production process, which have an affect on decreasing quantity and quality production, become such an obstacle thing for accomplishing it. Because of that reason, it demands a mechanism of automation and visualization for this production process which capable to help user in real time and on-line controlling and monitoring production process and its technical stipulations parameters. Therefore, in this final work writer design a production process automation system that hopefully helps Rancabali Field in increasing production quantity and quality which title "Designing Orthodox Dark Tea Milling System Automation Based SIEMENS S7 Soft PLC And Human Machine Interface (HMI) IN PT. Peerkebunan Nusantara VIII Rancabali".

Production process flowchart with its technical stipulation parameters, processing time each milling machines and the way it works is needed as the first time step in this research. It needs for making an automation mechanism, by use of Human Machine Interface (HMI) and Soft Programmable Logic Controller (PLC) in automation programs design and production process visualization. Hopefully the mechanism can helps user in doing a real time monitoring and an on-line production process controlling. In design this system, there are several things in solving those problems where divisible marginally in five step, there are preliminary phase, initialization phase, creative phase, test phase and design analyze, and also phase of conclusion and suggestion.

Automation program design allows the user to choose production process method, either automatic or manual one. There is also having the interim stop process when the system recognizes the powder temperature is out of recommendation. There are several facilities in visualization. There are controlling of Orthodox black tea production process, monitoring of milling room's temperature in real time and historical trends, monitoring of powder temperature, and reporting of Orthodox black tea production. Those facilitate user in controlling and monitoring Orthodox black tea process production.

From the research result which have been done to be obtained by conclusion that with the implementation of the CTC (Crushing, Tearing, & Curling) Dark Tea Milling Process Automation System based on Soft Programable Logic Controller (PLC) Siemens S7 and Human Machine Interface (HMI) will facilitate user in doing real time and on-line monitoring and controlling the production process with its technical stipulation parameters, and also reporting Orthodox dark tea milling production.

Keyword : Orthodox, Black Tea, Human Machine Interface (HMI), and
Soft Programmable Logic Controller (PLC)