ABSTRACTION

PT. PG. Tersana Baru is one of Indonesian national company that produces sugar which have primary objective in fulfilling Indonesian needs for sugar. PG. Tersana Baru was built in 1937 by N.V. Nederland Handels Maatschappij Rotterdam. In 1958, PT. PG. Tersana Baru was nationalized by Indonesian Government. Located in Cirebon West Java, PT. PG. Tersana Baru employed 1.934 workers consist of; 1.606 contracted workers and 328 fixed workers.

There are six stations in PG. Tersana Baru. One of the stations is Crystallization Station. The object of this research is Crystallization Station.

Based on the interview with one of the PG. Tersana Baru engineer that held between October-November 2007, there were several issues concerning efficiency and effectiveness in PG. Tersana Baru production. These issues were: there were still operator errors that affect the amount of PG. Tersana Baru sugar production, plant monitoring and controlling that were still manually driven, and human resource efficiency.

This research will give PG. Tersana Baru alternative solution for problems mentioned above. Designing Supervisory Control and Data Acquisition (SCADA) system and automation are the alternative solution offered by this research to PG. Tersana Baru. The first step to design SCADA system and automatically driven crystallization process is having better understanding in crystallization existing process. Analyzing the process and designing the SCADA and automatic system comes next. Hopefully, by converting sugar process in Crystallization Station that was still manually driven into automatically driven will give PT. PG. Tersana Baru better result in sugar production process especially in Crystallization Station.

Results from this research are SCADA system and automation system was successfully designed. In the simulation, PG. Tersana Baru engineers as users for SCADA system can control and monitor crystallization station from a remote area. PG. Tersana Baru SCADA system can also reports anomalies that happen in each crystallization pan. These anomalies can be used by PG. Tersana Baru engineer as a raw data to predict crystallization pan setting in the future.