PROGRAMMABLE LOGIC CONTROLLER POLYMER MIXING TANK

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ABSTRACT

This project is focuses on improving the performance of the plants sludge dewatering process by using Omron CP1E Programmable logic controller to increase the efficiency of the process which lead to reduction of cost of the polymer product. The process requires manually mixing the cationic polymer long chains with raw water to produce a product that will be send to the sludge tank process and filter press process where the sludge will harden for disposal. The addition of the programmable logic controller into the process will reduce error cause by human because the polymer will be affected if the method of preparing the mixture is not done according to certain standard. The Omron programmable logic controller will control the inlet intake water sequence process and polymer for pump on how much the concentration needed to be mixed by measuring the level of water inside the tank. The project is to upgrade an established system that uses manual mix method to automated method that will produce more accurate concentration of polymer without any human error.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Motivation

Most of the work described in this thesis was conducted at the Veolia Water laboratory and Robotics laboratory, Universiti Teknologi MARA (UiTM).The motivation for conducting the research works were:

i. To increase understanding how actual industrials control their instrument.
ii. To improve knowledge in programmable logic controller and its advanced features.
iii. To develop problem solving, analysis, synthesis and evaluation skills in the field of Electrical Engineering.
iv. To develop personal and social skills such as time management, self-confidence and interaction.