UNIVERSITI TEKNOLOGI MARA

Effect on The Performance Test Towards Flow controller And Level controller using Zieglar Nichols Tuning Rule

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Thesis submitted in partial fulfillment of the requirements for the degree of **Master of Education** (Chemical Engineering and Process (Hons))

Faculty of Chemical Engineering

June 2018

ACKNOWLEDGEMENT

Special mention goes to my enthusiastic supervisor, Sir Abdul Aziz bin Ishak. My degree has been an amazing experience and I thank sir wholeheartedly, not only for his tremendous academic support, but also for giving me so many wonderful opportunities and also giving me all the information, and the guidance for me to complete this research project 1.

My appreciation goes to my teammate for always not giving up to answer and teach me on how to complete my report.

Finally, this thesis is dedicated to my parents for the financial service and also keep on motivating me to not give up.

ABSTRACT

The project is relies on step input change of level control process and also flow control process and the step change must between ±10%. Level control (LIC11) DeltaV operate system and also flow control (FIC21) DeltaV operate system are demonstrate at process control laboratory located in pilot plant UiTM Shah Alam. The method used consist of open loop tuning and also a close loop tuning. The results express different values in term of settling time and the values needed for closed loop tuning method. The basic of process control is, when all of four block are connected the process control loop is called close loop system and when any of the blocks is disconnected the process control loop is called open loop system. In the close loop system, the controller compares the process measurement signal (PV) from set point (SP) and make necessary corrective action to the final control element. In open loop system, the controller has no control over the final control element therefore, the adjustment is made manually by operator.

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CHAPTER 1

INTRODUCTION

1.1 Overview of a level controller (LC)

In the old days, before the level controller is invented, many industries that include an overhead tank of water, where the feed is fed through an electric pump that is turned off when the tank is filled, and on when it ends up noticeably unfilled, is widely used. Along these lines, the most widely recognized approach to know whether the tank is filled is by watching the floods from the overflow. As such, the overfilling from the tank can caused the great loses up to million dollars contingent upon the kind of fluid being dealt with. As technologies become modern, these depletion can be interrupted through automatically regulating the tank by associating a feed-back control system where it is capable of slipping on or off as limit to the process limitations. Even though, the pumps that equipped can have a several speed motor where it may be more efficient rather than on and off mechanism. It is believe, at that particular time this pump are costly to secure and keep up particularly for small and medium enterprise. (C.N. Anyanwu & a, 2012). Most industrial distillation column that are having only a single composition controller or no composition control loops, that is work with reflux and boilup flowrates settled and the distillate and bottoms flowrate that is utilized for stock control are caused by the controller connections. By reducing the controller attractions a dual composition control configuration can be more engaging because it can decrease the energy cost markedly (Seider, 2000). However, according to (Phimister & Seider, 2000) whom introducing the semicontinuous, pressure swing process, a dualcomposition control is important in order to control both product stream concentration. This is to ensure there is no throughput drop significantly.