

## **ABSTRACT**

### **SIMULATION AND ANALYZING OF USING *STATIC VAR COMPASANTOR (SVC)* AS CURRENT BALANCE AND POWER FACTOR REPAIRING IN SIMULATION OF UNBALANCED THREE-PHASE SYSTEM**

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Nowadays, electric need is the main need for all of the society such as for public, business, industry, and social. In order to the electric need is enough in the entire sector, thus it is needed an electric system which electric supply can be preserved and distributed evenly. There are two kinds of networking distribution that is; primer networking distribution and secondary networking distribution. The problem which happens in distribution system is dividing of unbalanced load in every phase; include the loads which are in industry factory. The impositions in industry always changed. It causes unbalanced in distribution system. Therefore, it needs effort to equalize the system. *SVC* type *Thyristor Control Rector Fix Capacitor (TCR-FC)* is one of the compensatorequipment which can be used to solve that problem. Energy analysis method is *SVC* method which is used to do calculation more simply. The result of simulation that was made in Matlab Simulink r2009a program before using *SVC* was 12.36% and after installing *SVC* percent, the unbalance current was 4,4,%. The another objective of this final project was to repair power factor, so that power factor which before installing was 0,72 and after installing *SVC* was 0.98.

Keywords: Unbalanced System, TCR-FC, Power Factor