

## ABSTRACT

PT Tranka Cable are the company engaged in manufacture which produces power cable. Production power cable with the largest percentage of types of power cable XLPE (Cross Link Polyethylene) low voltage. Until now, companies are still faced with the problem of product quality. From the production data in January to August 2010, there is still a high level of disability that occurs that is equal to 11:36%. This exceeds the maximum limit tolerance company given a mounted to 4%.

To overcome this problem, improvements performed to improve product quality by reducing product defects that occur by using Six Sigma methods. This method aims to reduce the level of variation and defects in the process, so it can produce better quality. In Six Sigma there are five steps, called DMAIC (Define, Measure, Analyze, Improve, Control). In the define phase, carried out the determination of product selection and determination of improvement targets and also the identification of the product production process. In the measure phase, do the identification of critical to quality (CTQ), the calculation of the process stability, the calculation of DPMO and sigma values. In the analyze phase, analysis performed by using fish bone diagram to find out the root cause of the problem. Later in the improve phase, the proposed improvements to reduce the number of defects in the product is formulated.

Based on this research, there are two CTQ namely the visual conformance and physical conformance. Based on that CTQ there are 5 types of defects which are rough insulation or perforated, fail wire diameter, fail step length of the torsion, fail R-20, and fail insulation thickness. The proposal is given as a recommendation to improve the quality of the product by reducing the number of defective products, among others: providing installation of exhaust fans and wall fans, designing the tools and spare parts storage, using a detector at the insulation process, giving the resting place for the operator, provide training to improve skills, providing additional material protector and designing the base material which is made from boards, and performing machine maintenance every month.

Keyword : Power Cable, Defect, Six Sigma, Critical to Quality.