

## **ABSTRACT**

*CV. XYZ is the manufacturing company which plays role as the supplier of PT. Showa Indonesia Mfg., applying ISO 9001 as the requirement for their supplier. CV XYZ applies ISO 9001:2008 as the quality assurance system. However, it has expired since it has been upgraded onto ISO 9001:2015 which has many changes such as principles, number of clauses, and the existence of risk based thinking which forces CV.XYZ reviewing to the requirement changes that are not fulfilled based on the newest standard. Production process is the primary process in CV. XYZ where required consistent machinery maintenance and stick to the rules for achieving production target in the company. Based on the case, this research focuses on ISO 9001:2015 clause 7.1.3. about repair and maintenance of machinery for achieving one of the newest requirement. Designing started by conducting gap analysis based on actual business process with requirement based on ISO 9001:2015 clause 7.1.3, PCF APQC 9.2 maintenance work planning and maintenance management theory with some of gap results, like the company doesn't do maintenance as planned schedule and there are no documentation regarding to repair and maintenance of machinery, so risk consideration that may happened need to be done by doing risk assessment based on actual condition of repair and maintenance of machinery for get risk register that consists of process risk, like sudden machine damage and difficulty in follow up the findings. Furthermore, the design process of repair and maintenance of machinery based on ISO 9001:2015 clause 4.4.1 with input based on gap, risk register, and process objective result. The design results improved by using business process improvement (BPI) method for each activity and the suggestion were given by using tools contained in apply improvement technique step. This research results suggestion of the process of repair and maintenance of machinery documented by SOP expected to be useful for the company due to guidance in running the process of repair and maintenance of machinery in CV. XYZ. Considering the efficiency of the process of repair and maintenance of machinery in CV. XYZ, an integrated web-based application is created. This application features are as follows: collecting list of maintained machine, scheduling maintenance plan, documenting repair and maintenance of machinery results, and evaluating repair and maintenance activity.*

*Keywords: ISO 9001: 2015, risk based thinking, SOP, repair and maintenance of machinery, business process improvement*