

## **ABSTRACT**

*PT. XYZ is a company engaged in the petrochemical industry and plays an important role in agriculture. One of the products produced is raw material for formic acid factories which are consumers of the company. CO absorbing pumps are an important asset in the CO gas purification process that will be distributed to consumers. In the process of absorption, the absorbed CO solution contains copper, the copper sticks to the pump wall. Excessive use (not in accordance with its economic life) can cause some components in the pump to wear out and there is a failure that causes the pump to stop, thus inhibiting the gas purification process and distribution to consumers which will cause harm to company. Based on these problems, to avoid excessive use and reduce failure with appropriate maintenance policies so that the pump can be used in accordance with the function and economic life. The method used to determine maintenance policies is to use the Risk Based Maintenance (RBM) and Remaining Life Assessment methods. The Risk Based Maintenance (RBM) method is used to determine the value of risk received by a company due to a failure on a critical component. Based on the RBM method, the risk value received by the company exceeds the company's acceptance criteria, which is Rp. 440.451.691 or in the form of a percent of 2%. The Remaining Life Assessment method is used to determine the life of the pump, so that critical components and pumps do not wear out and fail. By comparing the two policies, which are maintaining the old pump or buying a new pump. From the Remaining Life Assessment method it is found that the policy that should be carried out is to replace the pump.*

*Keyword: Maintenance, Risk Based Maintenance, Risk Value, Remaining Life Assessment, Economic Age of Assets, Replacement Analysis.*