

## Abstract

*Currently PT.Krakatau Steel does not have a proper inventory policy so that the spare part supply at PT.Krakatau Steel always exceeds the number of requests that come in each month. This is a result of the absence of a proper inventory policy, which causes the user when ordering spare parts at the warehouse operator, the order does not take into account the amount of spare part inventory available. Therefore, it caused PT.Krakatau Steel to have overstock and as a result of the overstock PT.Krakatau Steel had high inventory costs. In controlling the spare part inventory, PT. Krakatau Steel has not classified spare parts based on the absorption value of the funds and what spare parts categories are needed and has not been able to determine the optimal number of orders so that PT.Krakatau Steel has overstocked and caused the total cost of the inventory to be incurred high. To solve this problem, PT.Krakatau Steel needs to control spare part supplies. The method used is ABC analysis and simple probabilistic methods to determine the size of the number of orders, safety stock and reorder points so as to reduce the occurrence of excess inventory and minimize the total inventory costs that must be incurred by PT.Krakatau Steel. Based on the results of calculations using the simple probabilistic method, the optimal number of orders for each spare part, reorder point for each spare part, safety stock for each spare part and the optimal total cost of inventory with savings in total inventory costs of 85%*

**Keywords:** *spare part, inventory policy, Simple Probabilistic method*