ABSTRACT

PT. Barata Indonesia (Persero) is one company engaged in the foundry, manufacturing and EPC (engineering procurement and construction) located in Gresik. Based on the identification of hazards that have been done, each workshop has a potential fire hazard is quite high. In an attempt to fire prevention and suppression, PT. Barata Indonesia has implemented a system of fire extinguisher and fire protection in the form of ERP, but its design is not in accordance with existing regulations, it is necessary to redesign and then performed a cost analysis with the approach of Benefit-Cost Ratio.

Determination of the number and type of fire extinguisher adapted to PERMENAKERTRANS RI of 04/MEN/1980. The design begins with the calculation of the evacuation means the number of people accommodated in a workshop based on NFPA 101 2000 edition, then to know the amount of the emergency exit and the width of the exit point. Calculation of benefit-cost ratio was done by identifying benefits received by the company and costs incurred. This calculation is done without design and with design.

Number of fire extinguisher required by PERMENAKERTRANS RI of 04/MEN/1980 are 146 units powder fire extinguisher to the type of extinguisher. The number of emergency doors on each workshop 1, 2, 3 and 4 is 7, 4, 5 and 5 units of emergency exit, while cupola have 3 units. At each workshop there is a meeting point, and located on the west and south of the workshop. From the calculation of benefit-cost ratio, which has an alternative ratio $\frac{B}{C} > 1$ is the alternative that is an alternative to the do redesign, then this alternative is selected.

Keywords: fire extinguisher, ERP, NFPA, Benefit-Cost Ratio.