

## ABSTRACT

*Acetic Acid Plant of acetaldehyde and the air is designed with a capacity of 15,000 tons / year and is planned to operate continuously founded in Solo, Central Java with an area of 26,000 m<sup>2</sup> and is designed to work for 330 days a year and 24 hours per day. Background of the establishment of this factory is to meet the needs of Acetic Acid in Indonesia. Preparation of Acetic acid using acetaldehyde oxidation process, through several stages of the process as follows: raw material acetaldehyde and air bubbles berkatalis reacted in a reactor at a temperature of 65oC Manganese Acetate pressure of 10 atm with 90% conversion. Products of the gas phase reactor will be separated by water in the scrubber at a temperature of 65oC and pressure of 10 atm and in the recycle to the reactors. Products under the reactor were poured into the distillation tower I to purify the acetic acid. The yield on distillation menara I in the recycle to the reactor and flowed to the bottom of the distillation tower II to obtain acetic acid purity of 99.8% and 0.2% water. Acetic Acid plant utilities to include water make-up of 49,769.2829 kg / h is taken from the Bengawan Solo river, 542 kW electricity, compressed air as much as 579.73 kg / hour, fuel as much as 29.3163 kg / hour. Results of economic analysis shows that these Acetic Acid plant requires fixed capital (Fixed Capital Investment) of U.S. \$ 20,412,492.54 and working capital (Working Capital Investment) of U.S. \$ 5,881,535.92 with a profit before tax of Rp. 40,774,904,173,32 and profit after tax of Rp. 20,287,452,086.66. The factory has a Return on Investment (ROI) before taxes and after taxes 19.98% 9.99%; Pay Out Time (POT) before tax 3.46 years and after tax 5.56 years, Shut Down Point (SDP) 13.39% and Break Even Point (BEP) 43.23%, with Discounted Cash Flow Rate (DCFR) 11,98%. Based on the above data, it can be concluded that Acetic Acid plant is worth considering for its establishment.*