ABSTRACT

PT TPC Indo Plastic and Chemical is a petrochemical private company. This company produce PVC Resin from VCM. Production process run using batch and continuous process. Batch process taken place in reactor while stripper, recovery and dryer performing continuous process. Each equipments has hazard potential such as toxic gas, fire and explosion. In this research, reactor was chosen to be analyzed, because in the reactor, polymerization process taken place which emit heat, because of exothermal characteristic of this reaction.

LOPA method can be a solution to determine any protective layer in the reactor to reduce risks. This research begin by identify any hazard potential using HAZOP method. From HAZOP, scenarios with worst consequences and affecting worker safety then analyzed using LOPA method.

From this research, we got 12 scenarios which has highest risk level. The decision were taken using risk matrix table, which conclude five scenarios at no-further action level, where the risk is very small and acceptable; six scenarios in optimal level, where risk in this level can be accepted, but any action to reduce risk must be considered; and one scenario at action at next opportunity level, where risk must be reduced gradually.

Keyword : Batch Reactor, Layer of Protection Analysis, Hazard and Operability Analysis, Risk Analysis