

## **ABSTRACT**

*PT Pupuk Kalimantan Timur is the largest producer of urea and ammonia fertilizer in Indonesia. PT Pupuk Kalimantan Timur operates seven factories, namely Plant 1-A, Factory 2, Factory 3, Factory 4, Factory 5, Factory 6 (Coal Boilers) and Factory 7 (NPK).*

*Factory 4 has the lowest production of urea and ammonia compared to the other four plants. This is due to the higher failure rate causing the production activities at Factory 4 to stop until maintenance activities are done. In the case, maintenance activities are inhibited because the required parts are not available in the warehouse so that maintenance activities must wait until the required spare parts arrive after the ordering.*

*Factory 4 consists of six systems and the most vital system is the Reforming system. Spare part management then applied to anticipate the unavailability of spare parts so it can support the company's maintenance activities.*

*From the Risk Matrix result, the selected subsystem of the Reforming system is the Primary Reformer (1-H-201) subsystem. Based on the RCS Worksheet, there are six critical components of the subsystem, namely XV-2009, XV-2003, XV-2004, FV-2013, PV-3008A, and FV-2016. The critical components are calculated the number of needs in one period using the poisson process method and from these results, determined its inventory policy. The total cost of inventory of these critical components is Rp 324.490.250,00.*

*Keywords: inventory analysis, maintenance, reliability centered spares*