

## **ABSTRACT**

*PT XYZ is the oldest cement factory in Indonesia. Kiln Division are responsibility of clinker production for the final process. PT XYZ is now implementing corrective and preventive maintenance on Kiln Machine, but it is still not optimal because the target of Clinker production has not achieve. One of the causes is unavailability of spareparts causing downtime. In this research is done spare parts management (SPM) using Reliability Centered Spares and Inventory Analysis method, the RCS method becomes the basis for determining the critical components of the machine. Furthermore, the use of Inventory Analysis method in this research to determine the policy and cost of inventory. By using RCS, found fourth critical components of Cooling main drive, pipe / sleeve, hydraulic pump motor and grease pump motor. in the inventory analysis stage get the value of ROP (re-order point) and ROQ (re-order quantity). m the calculation, the total cost that must be provided by the company is Rp 1,446,923,574.37*

**Keyword : Kiln, RCS, Spare Part, Inventory, downtime**