

ABSTRACT

PT XYZ is an industrial company that produces finished and semi-finished cement on a large scale for distribution throughout Indonesia. The company divides machines into two categories, namely primary, and secondary machines. The primary machine is the main engine that operates to produce cement and the secondary machine supports the performance of the primary engine. One of PT XYZ's primary machines is a kiln mill which functions to process the maturation of raw cement dough into semi-finished cement or clinker. Clinker already has its amount and selling value in the industrial market.

The performance of the primary machine which is assisted by the secondary machine makes these machines into a single unit and cannot operate alone. Therefore, the kiln mill has the support of secondary machines, one of which is a compressor with code D32 CP 8. A compressor is a machine that has the function to produce compressed air and distributing it through small pipes. The compressor used by PT XYZ is a screw compressor. Screw compressors have the advantage of being able to produce compressed air with a large discharge and able to operate for 24 hours. Maintenance is mandatory, especially for screw compressors that need more attention because of their advantages in operating 24 hours a day.

Throughout 2021, the D32 CP 8 experienced prolonged overheating without proper handling. Therefore, this study will provide output to immediately overcome the overheating problem so that fatal damage does not occur again that can harm the company using the Reliability and Risk Centered Maintenance (RRCM) method. The results of the study obtained 3 critical components consisting of a screw motor, air cooler, and oil cooler that need to be monitored with routine maintenance activities in the form of scheduled on-condition tasks at intervals of 40 days. With the proposed routine maintenance activities, maintenance costs incurred increase by 13% per year, but have an impact on increasing the reliability of the three critical components.

Keywords – [Compressor, Overheat, Critical Component, Reliability and Risk Centered Maintenance]