RELIABILITY ANALYSIS ON BOILER STEAM POWER PLANT
BY USING FAILURE MODE EFFECT ANALYSIS (FMEA)

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ABSTRACT

Boiler and system supporting an essential piece of equipment in a power plant. Reliability is a way to determine the performance of the equipment. The number of failures in boiler making maintenance activities must be structured properly so that the equipment does not make a big effect on the system. This study focuses on the reliability of the boiler and its supporting systems are summarized in a software-based PHP and MySQL. This device will encapsulate information supporting qualitative analysis with FMEA for the boiler and perform calculations in order to obtain a quantitative analysis. FMEA method is one method to qualitatively analyze the reliability of the finding that the failure occurs in the system as well as the effects and minimize the effect it will have. The MySQL database contains information on the equipment, sub equipment, kind of failure, the impact of failure, the cause of failure, severity, occurrence, detection and MTTF values. This information is useful for analysis of equipment to determine the FMEA method. The device is capable of analyzing the boiler equipment and supporting systems based on the small reliability supported by the Risk Priority Number (RPN) is obtained from qualitative analysis. The device is also recommended maintenance activities performed for equipment damaged in the form of reports.

Keywords : Reliability, FMEA, RPN, Programming PHP and MySQL, Boiler, Priority Maintenance