ABSTRACT

Evaluation of the performance of production facilities is very important for the company. PT. XYZ is a company that manufactures and distributes paraffin wax and its derivatives. The raw material for paraffin wax used by PT. XYZ is slack wax, which is a by-product from the petroleum fractionation production process. PT. XYZ experienced problems with the boiler engine, this machine experienced downtime three times, disrupting the overall production process, and the steam produced did not meet the target. The purpose of this research is to calculate and compare the value of the availability rate, performance rate, quality rate and OEE of boiler machines with world class standards, determine recommendations for improvements and re-measurements. This research uses the OEE method and corrective actions use the FMEA method. The results of this study obtained an availability rate of 99.88%, a performance rate of 74.69%, a quality rate of 100% with an OEE value of 74.60%. These values when compared with world class standards, the OEE value of PT. XYZ is still under world class standards. Below standard values are caused by low performance rate values. Based on the FMEA analysis, it is known that the highest RPN value is 336 and the lowest value is 270. After the analysis is carried out, corrective actions are produced and 3 corrective actions have been followed up. Based on this action, it produces a performance rate value of 89.14%, this value has increased compared to the previous performance rate value of 74.69%.

Keywords: *Production Facility Performance, Paraffin Wax, Boiler Machine, Overall Equipment Effectivines (OEE), Availability Rate, Performance Rate, Quality Rate, Failure Mode and Effect Analysis (FMEA)*

ABSTRAK

Evaluasi terhadap kinerja fasilitas produksi sangatlah penting bagi perusahaan. PT. XYZ adalah salah satu perusahaan yang memproduksi dan mendistribusikan *paraffin wax* dan turunannya. Bahan baku *paraffin wax* yang digunakan oleh PT.XYZ yaitu *slack wax,* yang merupakan salah satu produk samping *(by-product)* dari proses produksi fraksinasi minyak bumi. PT. XYZ mengalami permasalahan pada mesin boiler, mesin ini mengalami downtime sebanyak tiga kali sehingga menggangu proses produksi secara keseluruhan, serta uap yang dihasilkan tidak memenuhi target. Tujuan penelitian ini adalah melakukan perhitungan dan membandingkan nilai *avaibility rate, performance rate, quality rate* dan OEE mesin boiler dengan standar *world class,* menentukan usulan perbaikan serta melakukan pengukuran ulang. Peneletian ini menggunakan metode OEE dan tindakan perbaikan menggunakan metode FMEA. Hasil penelitian ini didapatkan nilai *availability rate* sebesar 99.88%, *performance rate* sebesar 74.69%, *quality rate sebesar* 100% dengan nilai OEE sebesar 74.60%. Nilai-nilai tersebut jika dibandingkan dengan standar *world class,* maka nilai OEE PT. XYZ masih berada dibawah standar *world class.* Nilai dibawah standar disebabkan oleh nilai *performance rate* rendah. Berdasarkan analisis FMEA diketahui nilai RPN tertinggi sebesar 336 dan nilai terendah nya 270. Setelah dilakukan analisis dihasilkan tindakan perbaikan dan yang sudah ditindak lanjuti sebanyak 3 tindakan perbaikan. Berdasarkan tindakan tersebut menghasilkan nilai *performance rate* sebesar 89.14% nilai tersebut mengalami peningkatan dibandingkan nilai *performance rate* sebelumnya sebesar 74.69%.

Kata Kunci: Kinerja Fasilitas Produksi, *Paraffin Wax,* Mesin Boiler, *Overall Equipment Effectivines (OEE), Availability Rate, Performance Rate, Quality Rate, Failure Mode and Effect Analysis (FMEA)*