

ABSTRAK

Mechanical seal merupakan komponen yang sangat vital dalam sistem *sealing* pada pompa, pompa 6010 J merupakan jenis pompa *sentrifugal* yang menggunakan sistem *mechanical seal*, fluida yang di lalui pompa 6010 J merupakan fluida berjenis *chemical aluminium sulfate* padat yang di larutkan, sehingga dalam operasional *mechanical seal* tidak mampu menahan bocoran *aluminium sulfate*, untuk mengatasi kerusakan terus menerus dilakukan *redesign* untuk mengatasi masalah kebocoran terus menerus, berdasarkan hasil kuisisioner *semantic differensial* dan diolah menggunakan metode *kansai engineering* analisis faktor dengan uji KMO menggunakan *software SPSS 17.1* didapat empat faktor yang terbentuk untuk melakukan desain baru *mechanical seal*, empat faktor tersebut diolah kembali menggunakan diagram *anfinity* sehingga didapat konsep baru *mechanical seal* yang ramah lingkungan, tahan terhadap *chemical* dan dapat meningkatkan efisiensi penggunaan *aluminium sulfate*. Sehingga proses operasional pompa dapat berjalan terus-menerus tanpa ada kendala dan dapat memperlancar proses produksi air bersih di pabrik pusri IIB PT. Pusri Palembang.

Kata kunci: *mechanical seal, kansai engineering, semantic differensial, spss*

ABSTRACT

Mechanical seal is a very vital component in the sealing system on the pump, pump 6010 J is a type of centrifugal pump that uses a mechanical seal system, the fluida through which the pump 6010 J is a chemical aluminum sulfate solid fluid type that is dissolved, so that in operational mechanical seals are not able to withstand aluminum sulfate leakage, to overcome the continuous damage redesign is done to overcome the problem of continuous leakage, based on the results of the semantic differential questionnaire and processed using the kansai engineering factor analysis method with the KMO test using SPSS 17.1 software obtained four factors formed to perform a new mechanical design seals, the four factors are reprocessed using anfinity diagrams to obtain a new concept of mechanical seals that are environmentally friendly, chemical resistant and can increase the efficiency of using aluminum sulfate. So that the pump operational process can run continuously without any obstacles and can expedite the process of producing clean water at the Pusri IIB Pusri Palembang company.

Keywords: *mechanical seal, kansai engineering, differential semantic, spss*