

Abstract

The pump is one of the essential equipments in the oil and gas industry. The main factor of the pump that must be met is the performance of the pump is in accordance with the initial pump's data sheet. If the performance of the pump is down, it will hinder the fluid transfer process either within or in the discharge flow. The title raised by the authors is the Performance Analysis pump and piping network calculation on 023 pump P 116 A LOC II area Pt Pertamina Refinery Unit IV Cilacap. The research purpose is analysis performance of pumps is 023 P 116 A, analysis the major and minor loss in the piping flow line

The research methods is a literature of study, interview, observation and discussion. The data were collected on 023 pump P 116 A and its piping network, the fluid is transferred in the form of water, the calculation method used minor losses and major loss loss on its pipeline network and pump HHP calculation and data collection on the vibrations of the pump.

From results of the data analysis it can be concluded that the decrease in pump performance is due to the losses along a pipeline that is 3,761985 m and hydraulic pump power of 0.3 Hp pump while in the case for unbalance it is due to vibrations that occur at the pump. The decrease in the pump affects the efficiency of the pump as the result, of analysis shows that the pump efficiency is only 16%. The effect of performance decrease on the 023 pump P 116 A causes fluid transfer time longer because the discharge which is generated is small

Intisari

Pompa adalah salah satu peralatan yang sangat penting dalam industri minyak dan gas. Faktor utama dalam pompa yang harus terpenuhi adalah performa pompa yang sesuai dengan data sheet awal pompa. Apabila performa pompa turun maka akan menghambat proses transfer fluida baik dalam waktu ataupun dalam debit yang dialirkan. Judul yang diangkat oleh penulis adalah Analisa Performa pompa dan perhitungan jaringan perpipaan pada pompa 023 P 116 A area LOC II Pt Pertamina RU IV Cilacap.

Pengambilan data dilakukan pada pompa 023 P 116 A dan jaringan perpipaanya, fluida yang ditransferkan berupa *water*, metode yang digunakan menggunakan perhitungan kerugian *minor loss* dan *major loss* pada jaringan perpipaanya dan perhitungan HHP pompa serta pengambilan data vibrasi pada pompa tersebut.

Hasil analisa data disimpulkan bahwa penurunan performa pompa disebabkan karena adanya kerugian sepanjang jalur pipa yaitu 9,395843 m dan daya hidrolis pompa hanya 0,3 Hp sedangkan di dalam pompa terjadi adanya *unbalance* akibat vibrasi yang terjadi pada pompa tersebut. Penurunan debit pompa berpengaruh terhadap efisiensi pompa tersebut karena hasil analisa menunjukkan efisiensi pompa hanya 16 %. Akibat penurunan performa pada pompa 023 P 116 A menyebabkan waktu transfer fluida lebih lama karena debit yang dihasilkan kecil.