

INTISARI

Sistem udara instrumen *yard* merupakan sistem udara instrumen di PLTGU Grati yang digunakan untuk menggerakkan peralatan pneumatik pada sistem penunjang pembangkit (*common*) seperti *Hydrogen Plant*, *Desalination Plant* dan *Water Treatment Plant*. Peralatan *common* sendiri memiliki pengaruh besar terhadap kinerja pembangkit karena saat peralatan *common* tidak bekerja dengan baik maka dapat mengganggu sistem peralatan utama bahkan dapat mengakibatkan unit berhenti beroperasi (*trip*). Oleh sebab itu, udara instrumen *yard* mempunyai fungsi yang penting sehingga keberadaan operasinya perlu mendapatkan perhatian yang serius.

Selama ini sistem udara instrumen *yard* di PLTGU Grati hanya disuplai dari *Yard Instrument Air Compressor* (YIAC). Namun karena faktor usia mesin dan pola operasi menyebabkan YIAC mengalami banyak kerusakan sehingga mengganggu operasional. Sehingga untuk menjaga ketersediaan udara instrumen di *common* diperlukan *back up*. Berkaitan dengan hal tersebut sehingga memanfaatkan *Service Air Compressor* (SAC) sebagai *back up* YIAC saat sistem udara instrumen di *common* terjadi penurunan tekanan. Pembuatan sistem *back up* dengan cara menambahkan *line* perpipaan dari *air receiver tank* SAC ke *air receiver tank* YIAC dengan dilengkapi peralatan pengontrol seperti *control valve*. Sehingga sistem udara instrumen di *common* tetap terjaga dan pengoperasian peralatan pembangkit tetap dalam keadaan normal.

Dengan penambahan sistem *back up* dari SAC ke YIAC maka dapat menghindari kerugian-kerugian finansial maupun non finansial yang sewaktu-waktu dapat terjadi. Selain itu juga dapat menjaga penilaian unit terhadap PLTGU Grati.

Kata kunci: Sistem Udara Instrumen, Sistem Udara *Service*, SAC, YIAC

ABSTRACT

Yard instrument air system is an instrument air system in PLTGU Grati which is used to control pneumatic equipments in auxiliary system of power plant such as Hydrogen Plant, Desalination Plant and Water Treatment Plant. Auxiliary equipment has a major influence on the performance of power plant because when it's not working properly it will disturb the main equipment system so can cause the unit stop operating (trip). Therefore, yard instrument air has an important function so the existence of its operations need to get serious attention.

Nowadays, yard instrument air system in PLTGU Grati only supply from Yard Instrument Air Compressor (YIAC). However, due to the age factor of the machine and the pattern of operation causing YIAC often occure trouble so can disturb the operation of auxiliary equipment. So, to maintain the availability of instruments air in the common required back up system. Therefore, we use Service Air Compressor (SAC) as back up of YIAC when pressure of instrument air system in auxiliary system drop. Creation of back up system doing by add piping line from SAC air receiver tank to YIAC air receiver tank and supported with controller equipments like control valve. So, instrument air system in common is maintained and the operation of the main equipment of power plant in normal condition.

The addition of back up system from SAC to YIAC can avoid financial and non financial losses that can happen at any time. In addition it can also keep the unit rating of PLTGU Grati.

Key word : Instrument Air System, Service Air System, SAC, YIAC, Back Up