

## ABSTRAK

Sistem DC ini berfungsi sebagai sumber tenaga peralatan proteksi, metering, komunikasi, dan penerangan darurat gardu induk. Pada gardu induk yang memiliki sistem DC pola ganda memiliki kekurangan, dimana ketika terjadi gangguan rectifier masih harus dilakukan manuver secara manual untuk mengatasi gangguan. Guna untuk mempermudah pekerjaan ketika manuver sistem DC pola ganda dan mengurangi resiko *Human Error* ketika manuver, dilakukan inovasi dengan menambahkan *Automatic Transfer Switch* sebagai kopel yang dapat bekerja secara otomatis saat terjadi gangguan. Saat rectifier 1 terjadi gangguan yang dideteksi oleh sensor tegangan. ATS (*Automatic Transfer Switch*) melakukan manuver secara otomatis, dengan menghubungkan bus 1 dan bus 2 sehingga gangguan teratasi. Ketika terjadi gangguan sistem AC, mengakibatkan kedua rectifier tidak dapat mensuplai beban. Supaya peralatan proteksi dapat terus bekerja, maka digunakan sumber tegangan cadangan dalam bentuk baterai.

**Kata kunci :** *automatic transfer switch, rectifier, sistem DC, sensor tegangan*

## **ABSTRACT**

*The functions of this DC source are as the energy source of protection device, metering, communication, as well as emergency lighting. In a substation that has a dual pattern DC system has a deficiency where when the rectifier interference occurs manually must still be maneuvered to overcome the interference.. To facilitate the maneuvering of dual-pattern DC system maneuvers and reduce man-man error is done by adding Auto Transfer Switch as a coupling that can work automatically when an interruption occurs. When system 1 occurs the interference is detected by the voltage sensor, so that the protection equipment can continue to work when the interruption is done automatically through ATS (Automatic Transfer Switch) to connect bus 1 with bus 2 so that system 1 get backup from system 2, when there is interference with system 2. When the AC system is in trouble that detected by voltage sensory it will make the both rectifiers are unable to accommodate the load. The step to make sure the protection device stay well-worked is by used the substitution voltage source in form of battery.*

**Key word** : Automatic Transfer Switch, rectifier, DC system, voltage sensor