

ABSTRACT

The DC system at the Padalarang Baru Substation have an important function and role in the reliability of the operation of the substation system to serve consumers. One of the tools in the DC substation system is a battery, which has a function as a direct current backup in the event of a partial or total disturbance (Blackout). The DC power supply is sourced from the rectifier and battery installed in parallel with the load. The main parts of the battery consist of: Electrodes, Electrolytes, Battery Cells, and Containers. The condition of the battery must always be in good condition, because if the system Blackout. the only supply power for control and communication at the substation is only supported by the battery, therefore a tool is needed that can measure the parameters of the condition of the battery and the room such as voltage total, positive voltage to ground, negative voltage to ground, temperature, and humidity, so that the condition of the battery is monitored at all times so that the reliability of the substation system is maintained.

Keywords : DC System, Substation, Battery, Direct Current, Maintenance, Voltage, Electrolyte, Current, Microcontroller.

INTISARI

Sistem DC pada Gardu Induk 150kV Padalarang Baru mempunyai fungsi dan peran yang penting untuk keandalan operasi sistem gardu induk dalam melayani konsumen. Salah satu alat pada sistem DC gardu induk adalah baterai, yang memiliki fungsi sebagai cadangan arus listrik searah saat terjadi gangguan parsial maupun gangguan total (*Blackout*). Catu daya DC berasal dari *rectifier* dan baterai yang secara paralel terpasang dengan beban. Bagian utama baterai terdiri dari : elektroda, elektrolit, sel baterai, dan *container*. Kondisi baterai harus selalu dalam keadaan yang baik, karena jika mengalami gangguan total (*Blackout*) satu-satunya *supply* tegangan untuk kontrol dan komunikasi pada gardu induk hanya ditopang oleh baterai, oleh karena itu dibutuhkan alat yang dapat mengukur parameter-parameter kondisi baterai dan ruangnya seperti tegangan total, tegangan positif *ground*, tegangan negatif *ground*, suhu dan kelembaban, agar kondisi baterai tetap terpantau setiap saat sehingga keandalan sistem gardu induk tetap terjaga.

Kata Kunci : Sistem DC, Gardu Induk, Baterai, Arus Searah, Pemeliharaan, Tegangan, Elektrolit, Arus, Mikrokontroler.