

Desain Water Treatment Plant PLTG PLN Haltim Antam 111 MW = Design of Water Treatment Plant PLTG PLN Haltim Antam 111 MW

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=9999920537097&lokasi=lokal>

Abstrak

Praktik keinsinyuran ini tentang desain Water Treatment Plant untuk PLTG PLN Antam Haltim yang memiliki kapasitas pembangkit 3x17 MW dan 2x30 MW. Sumber Raw Water diambil dari air tanah yang memiliki Total Dissolved Solids (TDS) sebesar 276 mg/l dan Total Suspended Solids (TSS) sebesar 302 mg/l. Pada Pembangkit Listrik Pembangkit Gas dibutuhkan kualitas air untuk air bersih dan demineralisasi sehingga untuk kebutuhan air bersih tersebut diperlukan proses pre-treatment plant dengan menggunakan Multi Media Filter (MMF) kemudian air tersebut disimpan di Tank dengan kapasitas 870 m³ untuk kebutuhan service water dan Proses Demineralized Plant membutuhkan proses reverse osmosis dan Ion Exchange kemudian air dari demineralized plant di simpan di tank demin dengan kapasitas sebesar 240 m³. Kebutuhan service water untuk PLTG Hatim ini sebesar 2,5 m³/h untuk memenuhi kebutuhan Fire Fighting, Service water untuk semua bangunan, Potable water, Dosing WTP dan Dosing WWTP sedangkan untuk kebutuhan demineralized Plant memiliki kapasitas sebesar 10 m³/h untuk memenuhi kebutuhan 3 unit Turbine Gas kapasitas 17 MW dan 2 unit Turbine Gas Kapasitas 30 MW. Desain water treatment plant harus memenuhi aspek Keselamatan dan Kesehatan kerja, Profesionalisme dan Kode Etik Insinyur.

.....This engineering practice concerns the design of the Water Treatment Plant for PLTG PLN Antam Haltim which has a generating capacity of 3x17 MW and 2x30 MW. Raw Water sources are taken from deep well which has Total Dissolved Solids (TDS) of 276 mg/l and Total Suspended Solids (TSS) of 302 mg/l. In Generating Gas Power Plants, water quality is needed for clean water and demineralization so that for clean water needs a pre-treatment plant process using a Multi Media Filter (MMF) then the water is stored in a tank with a capacity of 870 m³ for service water needs and The Demineralized Plant process requires a reverse osmosis and ion exchange process, then the water from the demineralized plant is stored in demineralized tanks with a capacity of 240 m³. The service water requirement for PLTG Hatim is 2.5 m³/h to meet the needs of Fire Fighting, Service water for all buildings, Potable water, Dosing WTP and Dosing WWTP while for demineralized Plant needs it has a capacity of 10 m³/h to meet the needs of 3 Turbine units Gas capacity of 17 MW and 2 Gas Turbine units with capacity of 30 MW. The water treatment plant design must meet the aspects of Occupational Safety and Health, Professionalism and the Engineer's Code of Ethics.