Optimasi Operasi Pembangkit Listrik Tenaga Air (PLTA) Menggunakan Linear Programming Dengan Batasan Ketersediaan Air

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Abstract	One of hydro power plant operational problem is how to maximize available water resouces to gather optimal electricÃ‚Â power generation. Water availability which is limited and can be stored in a reservoir will influence electrical energy generated byÃ‚Â the plant. This paper present a new approach of short term optimization of hydro power plant operation. The objective function isÃ‚Â to maximize energy which is produced by power plant on scheduling operation period, with consider water resource availability inÃ‚Â reservoir as operational constraint. The optimization problem is formulated in Linear Programming Method, in which this methodÃ‚Â is a commonly used to solve optimization problem in hydro power plant. Based on simulation results on Ketenger Hydro PowerÃ‚Â Plant using water flow data on June 1st 2013 shows that this method can be used to solve hydro power plant operation optimizationÃ‚Â problem well. Electrical energy as main objective function is maximized and all prevailing constrain is satisfied. On this short termÃ‚Â operation (24 hour) simulation, total energy can be produced is 96121,55 kWh, or 1427 kWh (1,51%) greater comparing with realÃ‚Â generation condition with 96694 kWh.
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