

Analisis Performance Efisiensi Siklus Rankine Dalam Sistem Pembangkitan Pada Pembangkit Listrik Tenaga Panasbumi (Studi kasus, PT. Geo Dipa Energi Unit 1 Dieng)

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ABSTRACT

Geothermal Power Plant PT. Geo Dipa Energi Unit 1 Dieng is one of the state-owned enterprises which engages in geothermal and electric production with the capacity total of 60 MW. Connecting with the reliability of electrical energy production, PT. Geo Dipa Unit 1 Dieng always makes optimization and efficiency to the generation system. Thus, analysis performance of Rankine cycle efficiency based on thermodynamics is one way to know efficiency performance and the factors that affect it. The performance of cycle efficiency is affected by many factors. They are generation design, heat loss in components, separation process of fluid, steam line pipe, silica scaling, Non-Condensable Gas (NCG) content, and turbine efficiency. Based on the calculation of thermodynamic law that has been carried out, it is obtained cycle efficiency performance as much as 20.32%, which means still efficient.

Keywords: *Geothermal Power Plant, Rankine Cycle, Efficiency, Geo Dipa Energi*