OPTIMIZATION OF GENERATING UNIT SCHEDULING IN WATER POWERED POWER PLANT (PLTA) IR. H. DJUANDA USING *LINEAR PROGRAMMING*

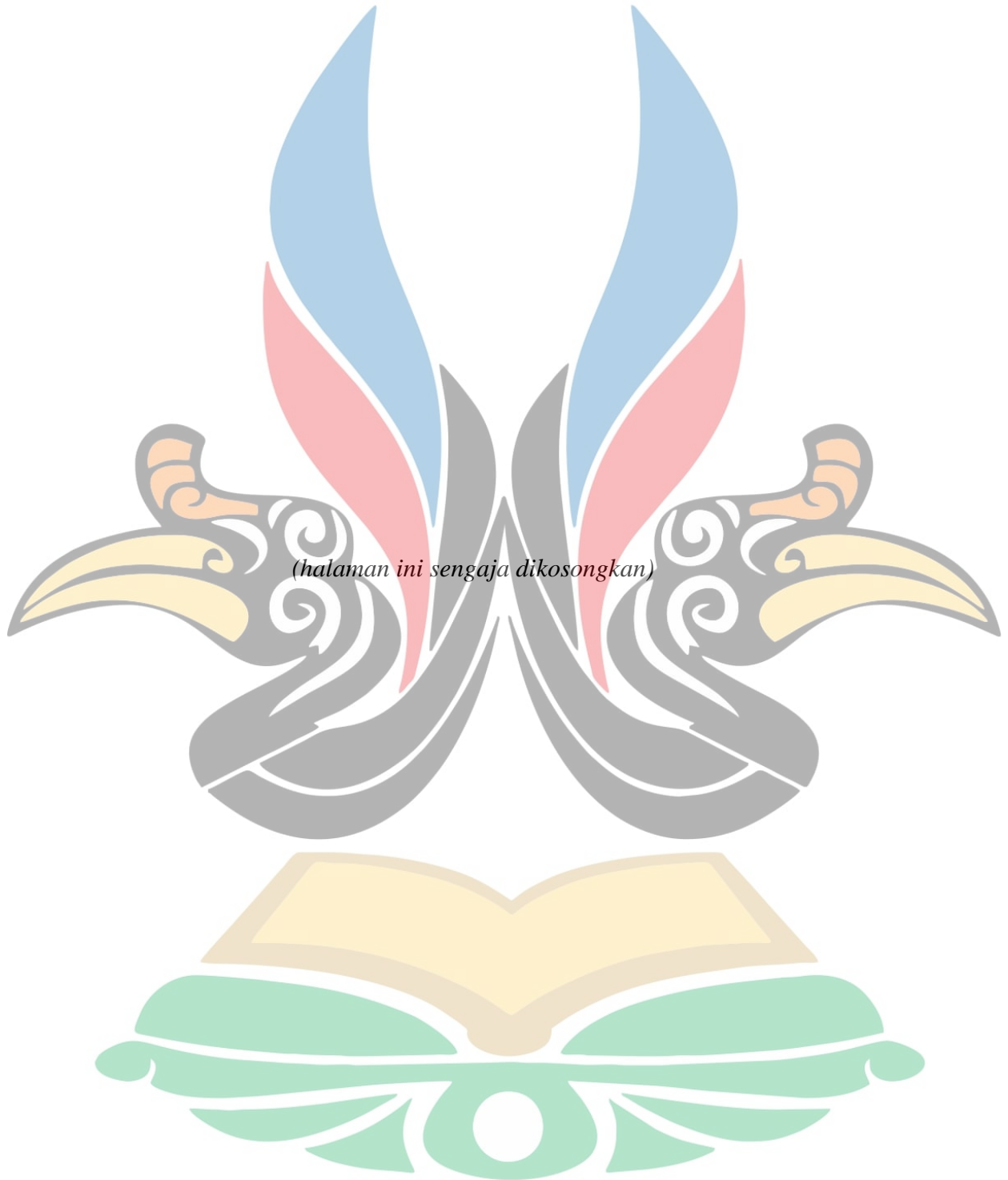|		
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ABSTRACT

Hydroelectric power plant (PLTA) is a generator that utilizes the flow of water discharge and the height of the water fall to produce electrical energy, but the results of this electrical energy also depend on the water available in reservoirs or dams and the demand for downstream water needs. By optimizing the availability of water stored in the dam (reservoir) and utilizing the required water downstream, a power plant must be able to operate generating units that work to produce optimal electrical power so that the costs incurred are more economical and efficient. By scheduling each generating unit, it is expected to optimize the number of generating units in a hydroelectric power plant (PLTA). At PLTA Ir. H. Djuanda there are 6 generator units to produce 187.5MW of electrical energy. PLTA Ir. H. Juanda. The problems that exist in hydropower Ir. H. Djuanda found that the generated electricity production is still not optimal because the 6 units of the generator are all in working condition. Therefore, this study presents a solution to problems regarding the effect of water discharge, water level and water fall height as well as scheduling a generation unit at a hydroelectric power plant (PLTA) for the medium term (6 months) using themethod Linear Programming (LP)with the help of software. analysis. The results of the optimization analysisscheduling of generating unitand total electricity load using themethod Linear Programming by comparing the real data in hydropower Ir. H. Djuanda got the average value of difference and error in January of 1.74 and 3.17%, in February of 3.9 and 6.6%, March 4.8 and 7%, April 43.0 and 26.33%, in May 50.5 and 32.8%, in June 2.1 and 1.84%.

Keywords: *Water discharge, scheduling, linear programming* (LP)

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