

Study of PLN (National Electricity Company) Type Foundation Relay Master Planning 150 Kv Transmission at Karangnunggal, Tasikmalaya District, West Java Province

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Abstract

To fulfill the electricity necessity and the improvement of service quality in Karangnunggal and its environs, subsequently PLN planned to set up a PLN sub station which had transmission 150 KV. Each technique building/construction needed an appropriate foundation suited to its geological condition.

The objective of this research is to determine the kind of foundation PLN sub station Karangnunggal and its effective depth. The researches that conducted were geology technique research and laboratorium research. The implication of geology and laboratorium research was to get some datas about the physical and mechanical characteristics of the soil and the purpose was to obtain some parameters in foundation planning calculation. Geology technique research in field involved drilling and dutch penetrometer activities. The field research data that used in foundation planning was log bor core drilling and dutch penetrometer whereas the laboratorium data that used were unit weight of soil 1.585 – 1.638 gr/cm³, cohesion 0,162 – 0,183 kg/cm², and angle of shearing resistance 7,0560 – 7,5710. From those datas then would be used to calculate the soil bearing capacity which allowed in each foundation. It was assumed if the weight of PLN sub station was 10 tons, so the kind of foundation that would be used was footing foundation 1.5 m x 1.5 m in the depth of 1 m which able to hold the weight 13.79 tons.

Keywords : Sub station, foundation