

RINGKASAN

Penelitian tugas akhir dilakukan di PLTA PT Kerinci Merangin Hidro, Provinsi Jambi. Daerah penelitian berada Kecamatan Batang Merangin, Kabupaten Kerinci, Provinsi Jambi. Formasi pada daerah penelitian adalah Jura Asai (Ja), dan Kuarter Vulkanik (QV). Tujuan dari penelitian ini adalah mengetahui kondisi geologi daerah penelitian seperti stratigrafi, geomorfologi, struktur geologi dan sejarah geologi serta mengetahui kestabilan lereng pada area di sekitar *switchyard*. Metode yang digunakan pada penelitian ini adalah pemetaan geologi secara langsung dan melakukan analisis laboratorium berupa petrografi, XRF, Slake Durability, sifat fisik dan mekanik batuan. Hasil penelitian didapatkan geomorfologi berupa bentuk lahan perbukitan struktural (S1), bentuk lahan Lembah Struktural (S2), bentuk lahan Fluvial (F1). Stratigrafi yang didapatkan berupa satuan batupasir tufaan, breksi andesit, dan slate asai. Struktur geologi yang didapatkan berupa kekar, sesar mendatar kanan dan sesar mendatar kiri. Berdasarkan analisis kestabilan lereng diketahui bahwa lereng pada area switchyard dalam kondisi tidak aman dan perlu diberikan penanganan dimana, nilai faktor keamanan pada lereng tersebut dibawah nilai ketetapan SNI 8460 :2017 ketetapan yang digunakan PLN dan perusahaan yang menjelaskan nilai fk dibawah 1.5 perlu diberikan rekomendasi penanganan.

Kata Kunci : Geologi, Analisis Kestabilan Lereng, Faktor keamanan, Rekomendasi Lereng

SUMMARY

The final project research was conducted at the PT Kerinci Merangin Hidro Hydroelectric Power Plant (PLTA), Jambi Province. The research area is located in Batang Merangin District, Kerinci Regency, Jambi Province. The formations in the research area are Jurassic Asai (Ja) and Quaternary Volcanic (QV). The objectives of this research were to determine the geological conditions of the study area, including stratigraphy, geomorphology, geological structure, and geological history, as well as to determine slope stability in the area around the switchyard. The methods used in this study were direct geological mapping and laboratory analysis in the form of petrography, XRF, Slake Durability, and physical and mechanical properties of rocks. The results of the research revealed geomorphological features in the form of structural hill landforms (S1), structural valley landforms (S2), and fluvial landforms (F1). The stratigraphy obtained included tuffaceous sandstone units, andesite breccia, and slate asai. The geological structures identified include joints, right-strike faults, and left-strike faults. Based on the slope stability analysis, it was determined that the slope in the switchyard area was unsafe and required treatment. The safety factor value for the slope was below the SNI 8460:2017 standard, which is used by PLN and companies that state that f_k values below 1.5 require treatment recommendations.

Keywords: Geology, Slope Stability Analysis, Safety Factor, Slope Recommendations