

ANALISIS PROTEKSI GFR DAN OCR PADA PENYULANG KROASIA MENGGUNAKAN SOFTWARE ETAP DI PT. PLN (PERSERO) UP3 DUMAI ULP DUMAI KOTA

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ABSTRACT

The Kroasia Feeder is a 20 kV distribution feeder operated by PT. PLN (Persero) UP3 Dumai ULP Dumai Kota that has experienced several faults, causing the Overcurrent Relay (OCR) and Ground Fault Relay (GFR) to trip. This study aims to analyze short-circuit fault currents and evaluate the OCR and GFR settings on the main line of the Kroasia Feeder using manual calculations and ETAP simulations. The analysis was conducted at five fault locations along a 7.939 km stretch. Manual calculations show maximum fault currents of 5,007.38 A for three-phase, 4,336.51 A for two-phase, and 285.87 A for single-phase to ground, while the ETAP results are 5,383 A, 4,662 A, and 286 A, respectively. The calculation results for the settings yielded an OCR of 247.8 A with a TMS of 0.13 and a GFR of 27.2 A with a TMS of 0.1. Compared to the existing settings, these results indicate that the OCR and GFR settings are still appropriate for the analyzed load and fault conditions.

Keywords: *OCR, GFR, ETAP, short-circuit fault current, Kroasia Feeder*