

## **ABSTRACT**

### **NETRAL GROUNDING ANALYSIS OF 150 kV SUBSTATIONS AT SOUTHERN SUMATERA INTERCONNECTION SYSTEM**

**By**

**FARDINAN AHMAD**

Short circuit fault in power system has a transient characteristic which has to be withstood by all power system components. A short circuit always results in sudden increase of current magnitude which is much higher than its normal condition and voltage at the point of fault drops to a very low magnitude. By installing new generating plants in power system, it is suspected that an increase in fault current would occur. Therefore, this research aims to analyze the change in current magnitude due to new installations of two power plants i.e. Sebalang Coal-fired Power Plant and Ulubelu Geothermal Power Plant. Simulation using ETAP Power Station 6.0 was conducted to obtain single line to ground fault current at every 150 kV Substation of Southern Sumatra Interconnection System. The obtained results show that the existing grounding resistors are still suitable to contain the ground fault current after installation of the new power plants.

Keywords: single line to ground fault, neutral grounding resistor