ABSTRACT

Each newly constructed power plant must have a grounding system. Every power plant must have a reliable grounding system to secure equipment and people. This study aims to design a grounding system with grid-rod design to get a value that meets safe standards according to IEEE Std 80-2000 at a gas engine power plant.

Design of grounding system located at Seram, Masohi, Maluku with a soil type resistance of 59,6 Ω.m, the maximum disruption current to the ground is 50.489 Amperes. In the analysis of grounding system at a gas engine power plant using manual calculation and simulated on software ETAP 12.6.0

The result showed that the value of grounding resistance (Rg) of 0,49 Ohm, the tension stress (Em) of 5185,5 Volt, and the step voltages (Es) of 1645,23 Volt. The design of grounding system located at Seram, Masohi Maluku meets the safe requirements of IEEE Std 80-2000.

Keywords : Grounding system, Grounding resistance, Touch voltage, Step voltage