

# **THE EFFECT OF SATURATION IN CURRENT TRANSFORMATOR ON ALENGKA FEEDERS THAT LOCATED IN OLD GAMBIR GAS INSULATED SWITCHGEAR**

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## **ABSTRACT**

Electricity distribution system is a distribution system that used to distribute electric power from large power sources to the consumer. The distribution system must have a protection system as a system safeguard from possible interference that can occurs. In the protection system, the current transformer output (CT) is used as an input for the protective device which will protect the protection device to work when there is interference on system. Therefore the saturation of Current Transformer must be considered in order to make the protection system work properly. The effect of current transformer saturation in this discussion is a current transformer for the 20kV Medium Voltage customers. From the calculation result of the maximum short circuit current, the alengka feeders produces the max phase I3 current of 13.895 kA, as for the current transformer on the alengka feeders with the ratio of 400/5 on CT and the saturation limit of 4.88 kA. From that result, we can predict that saturation will occur in current transformer if there is a maximum short circuit current on systems. If there is saturation in the current transformer, the overcurrent relays will not work properly. Caused by error on the rms value on the secondary side of current transformer that will make protection system on the upstream side to work and resulting in wider blackouts spread.

Keywords: Protection System, Over Current Relay, Current Transformer (CT)