**Evaluation of Relay Protection Coordination Distribution Network 20 KV at Gardu Induk Garuda Sakti, Panam-Pekanbaru.**

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**ABSTRACT**

Substation Garuda Sakti, Panam Pekanbaru is one unit of PT. PLN (Persero). Therefore, substation Garuda Sakti, Panam Pekanbaru must distribute and ensure the power supply to the load (the customer). To ensure the availability of power supply to the load (the customer), it is necessary to have the electrical system reliability and good continuity. Garuda Sakti GI electrical system consists of three transformers and 20 feeders (Feeder). The transformer has a capacity: Transformers 1 = 50 MVA, Transformers 2 = 50 MVA and Transformer 3 = 60 MVA. Type of transformer used is 3-Winding Transformer. Transformer 1 has 6 feeder and transformer 2 has 6 feeder, while transformer 3 has 8 feeders. To obtain good reliability and continuity, it is necessary to set up and coordination of protection systems are good and right. So that in the event of interference or fault, the possibility of error trip on safety equipment is smaller than expected. This final project aims to evaluate and analyze the safety relay setting and coordination at substation Garuda Sakti, Panam Pekanbaru.

**Keyword :** Coordination, safety relay, feeder, transformer, interference, continuity, setting.