TRIP RELAY ANOMAL ANALYSIS SBEF ON MALILI 1 GI TRANSFORMERS DUE TO DISTURBANCE IN FEEDER KAREBBE

Muhammad Rinaldy N. B.
Electrical Engineering Study Program, Faculty of Science & Technology
University of Technology Yogyakarta
Jl. Ringroad Utara Jombor Sleman Yogyakarta E-mail :
aldyrinaldy1999@gmail.com

ABSTRACT

PT. PLN (Persero) has a great responsibility in meeting the needs of the community for quality and reliable electrical energy needs. In the process of distributing electric power, the transformer has an important role to transform electrical energy with a nominal voltage according to needs. Power transformers or power transformers at substations are protected by an SBEF (Standby Earth Fault) relay as a backup relay to protect the transformer from phase to ground faults. The philosophy of installing a backup relay is to protect the transformer from damage due to external interference. If this disturbance is not isolated immediately, it will cause an overload on the transformer so that it can cause overheating and transformer failure. At the Malili substation, there has been a disturbance in the feeder which has caused the SBEF relay to trip on Transformer 1 of the Malili GI. The purpose of this study is to analyze problems regarding the SBEF trip relay on the transformer due to interference with the Karebbe feeder or focus on the SBEF relay anomaly of one of the transformers at PT. PLN ULTG Palopo. The technique in this research is field observation, and data collection methods are interviews with field supervisors and technicians who help solve problems at PT. PLN Palopo. In transformer 1 Substation at PT. PLN Palopo experienced an SBEF relay trip due to a disturbance in the Karebbe feeder. At the initial setting of the SBEF relay is 30A with a DT time setting of 3 seconds and a disturbance occurs with a current of 64A, the working time of the GFR Feeder Karebbe relay is 2.59 seconds. Then added with the working time of the PMT, the total time it takes for the PMT to open is 3.05 seconds. There are 3 settings used in this case, namely OCR (Over Current Relay), TMS (Time Settings), and GFR (Ground Fault Relay) settings. The main problem in this case is an anomaly when the Karebbe fedder experiences a phase-to-ground fault of 64A, the SBEF relay works and trips. The trip of this SBEF relay caused Transformer 1 GI Malili to trip so it went out for all feeders under the care of Transformer 1 GI Malili. The cause of the SBEF relay tripping when there is a disturbance in the Karebbe feeder is that the protection relay coordination setting is not right. By resetting the setting (IS) to 75 A so that the TMS becomes 0.88 on the SBEF relay, the anomaly when there is a disturbance in the Karebbe feeder which causes the SBEF relay to work no longer exists.

Keywords: Transformer, SBEF Relay, OCR & GFR, Substation, Overload.