

ABSTRACT

In the distribution of electric power transmission, many problems are encountered. Disturbances that commonly occur in electric power transmission systems are influenced by a variety of factors, one of the factors causing interference with the 150 kV SUTT can come from insulators and conductor wires. Damage to the isolator may occur due to lightning, breakage or the isolator is electrically damaged. The insulator is struck by lightning, the surface will experience a defect, it looks like the rest of the fire jump, but the electrically damaged insulator will look like a normal insulator.

Therefore, the method of measuring the leakage current of the insulator uses a puncture test isolator, to look for the insulator that is electrically damaged. Measurement of leakage current that has been done will get results in the form of a point where the insulator is electrically damaged originating. In the distribution of electricity there is one of the factors causing the disruption of 150 kV SUTT which is derived from the Isolator. The damage occurred because of a lightning strike that caused the insulator to be electrically damaged, therefore a process of measuring the leakage current was carried out on the insulator using the puncture test method. At the time of measuring the isolator gets a curve like a satellite dish and does not experience a significant decrease in measurement and the isolator is considered damaged if the reading is 30% or more below the normal curve shape of other isolators in one string.

Based on the results of the researchers' calculations, the Positive Reactance of the insulator chip based on the test results is $X_c = 534,602.2$ Mega Ohm. The distribution of the voltage on the insulator for 12 pieces of insulator at line voltage to neutral 86.7 kV and the voltage of each isolator is 7.22 kV. Leakage current from a piece of insulator that has been affected by interference based on test results $I = 0.0135 \mu\text{A}$

Keywords: Isolator, lightning strike disturbance, leakage current measurement.