MODELLING OF VARIOUS METEOROLOGICAL EFFECTS ON LEAKAGE CURRENT LEVEL FOR SUSPENSION TYPE OF HIGH VOLTAGE INSULATORS USING HMLP NEURAL NETWORK

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Merujuk kepada perkara di atas, bersama-sama ini disertakan 2 (dua) naskah Laporan Akhir Penyelidikan bertajuk "Modelling Of Various Meteorological Effects On Leakage Current Level For Suspension Type Of High Voltage Insulators Using Hmlp Neural Network".

Sekian, terima kasih.

Yang benar,

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ABSTRACT

The electrical power system lines sometimes pass along the coastal regions and transverse through the industrial areas of the Peninsular Malaysia. The phenomenon of salt blown from the sea to the land at the coastal area was causing salt deposition to the transformer bushing surfaces as well as the atmospheric pollution, torrential rain and ambient humidity. These all factor eventually contaminating the bushing surfaces and produced leakage current. Hence, it triggering to insulator flashover and finally the hot power arc will damage the bushing. The aim of this project is to obtain accurate information about the degree of the leakage current level which high voltage insulators are exposed to when they are installed in coastal area. For this project, Artificial Neural Network (ANN) was introduced using Hybrid Multilayered Perceptron (HMLP) Network with Modified Recursive Prediction Error (MRPE) to model leakage current level as a function of various meteorological parameters using Matlab. The meteorological parameters that are used as input based on the measured leakage current data at YTL Power Station in Terengganu. The leakage current value from the Artificial Neural Network model were compared with the measured value and also with the value obtained from multi regression technique that were developed previously. The purpose is to estimate the leakage current level when the meteorological parameters are known. This knowledge may help in the establishment of maintenance policies to cleanse polluted insulator and to prevent insulator from damage.