Abstracts

Zinc oxide arresters devices are essential in power system protection, contributing to increase reliability and to preserve the continuity of service and electric supply. These devices are installed between phase and ground transmission lines, with a small leakage current at Maximum Continuous Operating Voltage (low current region), and reaching high amplitude currents once a discharge takes place at high current region. At low current region, the leakage current consists of a capacitive and resistive component. Most leakage current monitoring systems of ZnO surge arrester are based on the measurement of the resistive component, because it can inform the degree of degradation of the surge arresters. However, it represents only about 5% to 20% of the total current. The study is focused on provide a monitoring system able to monitor the total leakage current, due the fact it behaves differently for various types of surge arresters defects. Thus, it is possible to use the total leakage current to find defects in surge arresters, as well as to know its defect characteristics. In this paper a system capable of obtain the leakage current through a toroid, used as Voltage Transformer, will be presented. This transformer is connected to a conditioning circuit, which will be processed and sent wirelessly to a software at an operation center. This software, which was developed as part of this work, is able to receive and store the data automatically; creating a database that will serve for analysis and diagnostics of the arresters under study.