World Academy of Science, Engineering and Technology
International Journal of Electrical and Computer Engineering
Vol:8, No:05, 2014

Interpretation of Sweep Frequency Response Analysis (SFRA) Traces for the Earth Fault Damage Practically Simulated on the Power Transformer Specially Developed for Performing Sweep Frequency Response Analysis for Various Transformers

Authors : Akshay A. Pandya, B. R. Parekh

Abstract : This paper presents how earth fault damage in the transformer can be detected by Sweep Frequency Response Analysis (SFRA). The test methods used by the authors for presenting the results are described. The power transformer of rating 10 KVA, 11000 V/440 V, 3-phase, 50 Hz, Dyn11 has been specially developed in-house for carrying out SFRA testing by practically simulated various transformer damages on it. Earth fault has been practically simulated on HV "U" phase winding and LV "W" phase winding separately. The result of these simulated faults are presented and discussed. The motivation of this presented work is to extend the guideline approach; there are ideas to organize database containing collected measurement results. Since the SFRA interpretation is based on experience, such databases are thought to be of great importance when interpreting SFRA response. The evaluation of the SFRA responses against guidelines and experience have to be performed and conclusions regarding usefulness of each simulation has been drawn and at last overall conclusion has also been drawn.

Keywords : earth fault damage, power transformer, practical simulation, SFRA traces, transformer damages
Conference Title : ICEE 2014 : International Conference on Electrical Engineering
Conference Location : London, United Kingdom
Conference Dates : May 26-27, 2014