INDUSTRIAL REPORT WRITING

Aim: Industrial HV testing report of transformer/cables/insulator.

The department of electrical engineering at RGCER, Nagpur organized an industrial visit to "Sonali Transformers, MIDC, Hingna, Nagpur" for students of 7th Sem electrical department.

"Sonali Transformers, MIDC, Hingna, Nagpur" is one of the oldest and largest substation in Vidarbha region. It is located at MIDC area, Hingna.

Transformers are very important and costly apparatus in power system area at core has to be taken exercise to see that transformers are not damaged due to transient overvoltage of either lightning or power frequency. Hence overvoltage test become very important in testing of transformers. Here only the overvoltage test are discussed and other routine test like the temperature like test, short circuit test, etc. are not included and can be found in relevant specification.

A) **Induced voltage test:** Transformers are tested for overvoltage by exciting the secondary of transformer from a high frequency AC source (100-400 Hz) to about twice the rated voltage. This reduces the core saturation and also limits the charging current necessary in large power transformers. The insulation withstand strength can also be checked.

B) **Partial discharge test:** Partial discharge test on windings are done to access the discharge magnitudes and the ratio interference levels also the transformers are connected in manner similar to any other equipment and the discharge measurement are made. The location of the fault or void is sometimes done by using travelling wave similar to that for cables. So, for no method has been standardized as to where the discharge is to be measured. Multi-terminal partial discharge measurements are recommended under the application of power frequency voltage. The discharge magnitudes greater than 10^4 pica coulombs are considered to be serf and the transformers insulation should be such that the discharge magnitude will be for below this value.