

Risks and protection of industrial installation (electric discharges effects)

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Abstract

The dielectric components play a significant role in the manufacture of the equipment of high voltage (cable, transformers, condensers). Insulating materials must have properties very significant in order to deal with various constraints such as: thermic , electric, mechanical constraints .

Unfortunately, the insulating materials often lose their properties and undergo degradation specific in particular the reduction in dielectric rigidity but also a deterioration able to abolish the insulating matter.

The most significant origin of the degradations undergone by insulating materials constitutes an insulation subjected to the high voltage is that due to the action of the partial discharges which constitute one of the principal causes reduction in the lifespan of the electrical appliance but also of their deterioration.

These partial discharges are also the cause of several accident (explosion, fires) creating damage significant which can be at the economic origin of unfavorable effects and even of the accidents fatal, from where the need for a study on the impact of the insulation of the electrical appliance, their evolution, the danger which they generate that it is on the human being or the industrial processes.

Key Words : electric discharges, risks, insulation, erosion by DP, breakdown, ageing.