USING THE LABORATORY AGEING METHODS TO ESTIMATE POLLUTION STRENGTH OF COMPOSITE INSULATORS

General characteristics of pollution tests. The range of high voltage values is defined by IEC standards and Polish standards (81). They precise the way of preparing the objects to be tested, introducing solid and semi-fluid pollution layers. The requirements for testing equipment define the source short-circuit current to $I_s > 0.15A$ depending on $R/X$ at condition of the alternating voltage of $0.5-1$ p.u.

The estimation of insulator being tested is carried out by determining the amount of $0.5\%$ of flashover voltage according to the conductivity of solid and semi-fluid coating (acc. to IEC 81-1 1989, HD 088.1 S1)- minimum flashover voltage with respect to conductivity value. When applying heavy salt mist then the estimation is based on the level of salt water having been withstood. Basing on the tests having been carried out so far it may be concluded that using solid or semi-fluid coatings might be valid enough when the porcelain is considered. However, tests carried out for artificial insulators, where their hydrophobie causes weak adherence of pollution coating it seems more convenient to apply the salt mist instead. Moreover, it seems also more reasonable method, as salt mist pollution allows to observe more non-uniform distribution of surface conductivity that gives the distribution similar to that being found in natural conditions. There is the possibility to correlate the ageing tests with the pollution ones. Using solid layers seems to show some advantage, i.e. gives the better repeatability of results and allows to use well known relationship between the layer conductivity and pollution intensity, considered for natural conditions and pollution zones (9). The considerations lead to the attempt of explaining the correlation between testing methods and the results obtained for different foreign coatings, particularly the relation between the salinity having been withstood and the layer conductivity for various pollution zones. 9. Pollution tests for selected composite insulator models. The pollution tests have been carried out using the composite epoxy insulator of $2$ kV, shown at Fig.1, acting as a functional model, with regard to the standards mentioned above, for four different foreign layers: - semi-fluid coating. - solid coating. - salt fog. The methodology of the tests have complied the standards.
required [8]. Thus the tests included cyclic restoring of the pollution, layer after each series of flashover voltage moacuromoto. The cycle precedure were adjected accordingly for each kind of pollution coating. The procedure for comifilling coonting inoluded like fill wing.

کلمات کلیدی:

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