A Study on the Water Absorption Test of Generator Stator Windings Using Probability Distributions

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Abstract

Water absorption in water-cooled generator stator windings can cause serious accidents such as insulation breakdown and it brings a generator to the unexpected sudden outage. Accordingly, it is important to diagnose the water absorption of them in the effective operation of power plant. Especially, the capacitance value which is measured for diagnosis is very small so the special diagnosis methods like stochastic theory are needed. KEPRI developed the water absorption test equipment and diagnosis technology for them. In this paper we propose that water absorption test of generator stator windings using some probability distributions. The proposed diagnosis technology is applied to the real system and the results of water absorption test for stator windings are agreed to them of water leak test.

Key Words : Generator stator windings, Water absorption test, Insulation breakdown, Outlier detection