

Abstract

A.Yatseyko, K.Kozak

INFLUENCE OF THE MODE OF NEUTRAL OF THE ELECTRIC SYSTEM OF 6 - 35 KV IS AT THE LEVEL OF INTERNAL OVERSTRAINS.

The electric networks of 6-35 kV can work in the mode with isolated, resistive - and the resonantly-grounded neutral. At the same time, in a scientific environment there is not definite idea in relation to application of that or other method of neutral ground.

The most widespread reasons of emergency damages in these electric systems are arc and commutation overstrains, and also ferroresonance processes.

The executed researches on the basis of digital design of influence of the mode of operations of neutral of the electric system of 6-35 kV on multiplicity of internal overstrains allow to assert that the mode of operations of neutral influences at the level of arc and ferroresonance overstrains and does not influence on the value of overstrains during commutations of electric motors. The most values of arc overstrains are observed in the electric systems with the insulated neutral. At a resonant neutral of considerable decline of sizes of arc overstrains ground it is possible to attain only for a case practically ideal resonant tuning.

Application of high-resistance neutral ground provides the considerable decline of levels of arc overstrains, practically to the values safe for the isolation of electrical equipment regardless of character of burning of earthing arc and configuration of the electric system. Ferroresonance processes arise up in the electric systems with the insulated neutral and result in damages first of all, measuring electromagnetic transformers of tension and terminators of overstrains nonlinear. The increase of the secondary loading of transformer of tension within the limits of class of exactness does not result in fading of ferroresonance, and vice versa, results in the increase of sizes of overstrains.

Commutations of electric motors are accompanied by the overstrains of considerable sizes, that present a serious danger for the isolation of these electric machines that is made with the facilitated isolation. On the sizes of these overstrains influence: character of commutation, length and parameters of nourishing cable, type of engine, him secondary loading and mode of operations of the electric system.