экземпляр в некоторых режимах имеет отклонения, что могло быть незамеченным при отсутствии таких испытаний.

Testing devices of relay protection by RTDS system

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RTDS (Real Time Digital Simulator) is a specialized complex for modeling of stationary regimes and electromagnetic transients in power system (PS) in real time. A distinctive feature of the complex is that it generates electrical signals (currents and voltages) occurring in a simulated PS, in physical form, in the form of voltage with amplitude of 10V. After sending of these signals to the inputs current amplifier and voltage amplifier respectively, performing scaling, we get secondary currents and voltage, corresponding to real-life processes in PS. Thus, if set the fragment of power system with its real parameters into simulating complex, you can test specific devices of relay protection and automation in conditions close to real for this power system. Databases of specialized software complexes used for calculating relay protection devices and for calculation of parameters of emergency regimes have a sophisticated schemes of power systems. These schemes have a large number of nodes and branches. There is require quantitative increase of processor modules of the complex to create schemes of the same complexity in complex RTDS. It is economically inexpedient. Another way is to perform an equivalent circuit to acceptable sizes. Can do so, for example, using Russian program for calculating relay protection settings AWP SRP (АРМ СРЗА). Its composition software module CALCULATION EQUIVALENTS CIRCUIT allows you to perform this task.

With the help of the program the AWP SRP was designed impedance protection real line one of the power systems of Russia. Then, after equivalization, simplified version was modeled using complex RTDS and physical signals submitted to the real device of relay protection-SHE 2607 016. At all stages, the electrical signals in specific modes was compared. The tests showed that this unit in some modes has a deviation that could be unnoticed in the absence of such tests.