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EVALUATION OF SHORT CIRCUIT CURRENTS AFTER COMMISSIONING OF NEW FACILITIES IN EPS OF MACEDONIA

ABSTRACT

In the next period (5 to 7 years) there is a prospect of construction of few new capital objects in Macedonian transmission network: new 400 kV interconnection lines and new production facilities. Besides all positive effects of their construction, raise of value of short circuit currents (SCC) in existing power facilities is expected, that can yield to problems with installed equipment in the facilities and jeopardize the level of reliable system operation. In the paper are estimated new values of SCC using detailed model of transmission network in Macedonia. Influence of the neighbors is simulated by so-called Ward equivalent that is based on available data for electric power systems in the region. All buses in the network (high-voltage transformer substations) that have noticeable large change in SCC are point up. Estimated values of SCC may be used for performing different type of inspection: check of technical parameters of existing high-voltage equipment in the facilities, check of grounding systems and safety conditions, check of thermal loading of grounding wires of transmission lines etc.

Keywords: short circuit currents, new capital investments, Ward equivalent.