ESTIMATION OF OUTAGE PROBABILITY OF SCHEMES OF SWITCHGEARS FOR 110KV SUBSTATIONS

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ABSTRACT

Electrical network of a city is developing gradually with city developing. Developing of electrical network should be realized according to some principles in order to ensure the possibility to provide energy to customers with minimum cost in the future. High voltage grid structure of cities has some similarities – almost all high voltage grids of cities have ring structure, some of them have interconnections between main substations (also called diagonals) and radial lines from ring to the centre of city too. Technically and economically optimal scheme of switchgear should be used, when creating new substations or renovating existing ones. One of technical requirements to electrical grid is dependability (often term "reliability" is used instead of term "dependability") of power supply. It is well known that capital investments and dependability depend on each other. If the load of new or renovated substation is known and are known the parameters of dependability for switchgears it is possible to choose the best switchgear type for substation. The parameters of dependability for some types of 110kV substations` switchgears are calculated at the work. At the work are also campared switchgear schemes with different types of isolation – Air Insulated Switchgears (also called AIS) and Gas Insulated Switchgears (also called GIS). The calculations approved higher level of dependability of two busbar switchgear comparing to other switchgers` schemes.