Fault Level Analysis on Syrian Transmission Network 230 Kv [1]

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Abstract

The fault analysis problem in power system is of great concern, where fault levels on substation bus bars are calculated as well as power flow in faulted network lines to determine circuit breakers design parameters and protective relays setting of all network areas.

In this research, short circuit analysis of Syrian network 230 kV is carried out and fault level on substation bus bars in case of 3 ph and 1 ph short circuit is calculated, the bus bar short circuit capacity is compared with circuit breaker interrupting capacity.

Results of the study show that the fault level on the transmission network is sensibly increased, due to the increasing of new power plants and the extension of existing power plants connected to this network, especially when it is working within the eighth interconnected network

Research also shows that fault levels in many points of the analyzed network exceed the interrupting capacity of circuit breakers installed on the network, which leads to abnormal operation condition affecting the security and reliability of the power system and may cause serious damages to different parts of the network due to the failure of circuit breakers

Keywords: Fault Analysis, Short Circuit, Short Capacity, Interrupting Capacity, Transmission Network, Circuit Breakers, Bus bars, Fault Current.

[1] For the paper in Arabic see pages (197-211).

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