

Voltage Profile Analysis of Syrian Network¹

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Abstract

It is known that transmission lines, loaded to their surge impedance, have no reactive power flow and will have approximately flat voltage profiles along their length.

On long transmission lines, light loads result in rise of voltage at the receiving end, and heavy loads will lead to a large drop in voltage.

Reactive power compensation is used to reduce high voltages or to raise low voltages in case of heavy loads, improve voltage profile, increase power transfer, and improve the system stability.

In this study, voltage profile on Syrian network is analyzed, as well as the impact of shunt reactive power compensation in distribution network on voltage profile, transfer capacity and the possibility of optimizing the generation scheduling.

Research results indicate that new policy for reactive power management on Syrian network will lead to improve voltage profile besides their great economical and technical profits on transfer capacity, system losses and generation scheduling.

Key Words: voltage profile, reactive power compensation, bus bars, voltage drop, transport lines, loads, generation scheduling, Syrian network, voltage control.

¹ For the paper in Arabic see pages (353-378).

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