DUT DURBAN UNIVERSITY OF TECHNOLOGY

ELECTRICAL POWER ENGINEERING

Department of Electrical Power Engineering

Postgraduate Research Template

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	Student Name / Surname	Sboniso Brutus Masikana	**Start Date**	March-2019	**Supervisor**	**Dr G.Sharma**
	Title of Project	Voltage Stability in Distribution Network	**Completion**	Sept-2020	**Co-Supervisor(s)**	**Mr K.T Akindeji**
	Program of Study (M Eng. / D Eng.)		**M Eng.**			
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Synopsis of Research Project: (< 300 words)

In recent years, the demand for electrical energy has increased drastically due to increment interest in the production of electric energy from renewable energy sources (RES). The demand has severally constrained power network due to limited resources and environmental restrictions no matter how is systematised. The disturbances and losses from the initial operation condition are unavoidable and must be modelled before accurate representation can be calculated. This paper is aimed towards on investigation and identifying the optimal location that has a minimum voltage profile in terms of voltage stability indices (VSI) as it more sensitive to the voltage collapse and blackout. And placement of Flexible Alternating Current Transmission System (FACTS) controller devices at the weakest transmission line or bus bar to improve the voltage stability in the network. This proposed approach will be based on modelling and imitation on IEEE 10 bus test distribution network using MATLAB to investigate and analyse a power distribution network with and without a Flexible Alternating Current Transmission Systems (FACTS) devices i.e. UPFC for reactive power compensation and voltage control. The results of simulations will then be studied which may involve statistical analysis, quantitative evaluation of network and other graphical interpretations of the various simulations.
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