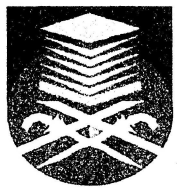

FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

SHAH ALAM

SELANGOR DARUL EHSAN

VOLTAGE SAG COMPENSATION USING D-STATCOM AND DVR IN DISTRIBUTION SYSTEM

MOHD RIDHWAN BIN ABDUL RANI

BACHELOR OF ELECTRICAL ENGINEERING (HONS.)

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Mohd Ridhwan Bin Abdul Rani
Faculty of Electrical Engineering
Universiti Teknologi Mara (UiTM)
Shah Alam, Selangor Darul Ehsan

ABSTRACT

Nowadays, power quality problems have increase concern among utilities provider and customers. This is due to customers nowadays are better informed about power quality problems and this will challenged utilities to improve power quality. Other than that, as industrial equipment becoming more complex, power quality becomes more significant even to minor voltage distinction. In term of economic reason, as a result of power quality problems, the costs of losses keep increasing with conjunction to rapid growth in high technology industries

Voltage sags is the most common type of power quality disturbance in the distribution system. It can be caused by fault in the electrical network or by the starting of a large induction motor. Although the electric utilities have made a substantial amount of investment to improve the reliability of the network, they cannot control the external factor that causes the fault, such as lightning or accumulation of salt at a transmission tower located near to sea

This project presents the compensation of voltage sag in distribution system using Distribution Static Compensator (D-STATCOM) and Dynamic Voltage Restorer (DVR). Both models are based on the Voltage Source Converter (VSC) principle. D-STATCOM injects a current into the system to mitigate the voltage sags and DVR inject the voltage into the system to mitigate the voltage sags. The performance of DVR and D-STATCOM was studied by varying the supply voltage and fault resistance. The simulations were performed using MATLAB SIMULINK version R2010.

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