Weerawoot Kanokbannakorn 2008: The Studies of Voltage Sags Correlations between Transmission and Distribution System. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering.
Thesis Advisor: Associate Professor Trin Saengsuwan, Ph. D. 106 pages.

Recently, both electrical utilities and their customers increasingly concern in power quality problems due to increasing in the number of sensitive equipments in the power system such as computers, motor drives, electronics devices, etc. These problems mainly cause damaging or leading to malfunction of voltage sensitive equipments. Power quality meters are employed to monitor and record these power quality events. Then, these recorded data is used to analysis and assessment to protect and improve power quality.

The voltage sag or dip is one of the most concern problems. A sag event is a short duration reduction in rms voltage, which is caused by short circuit and starting of large load in the power system.

This research aims to study the correlations of voltage sags occurred in between the transmission system and the distribution system. Rotchana substation of Provincial Electricity Authority (PEA) network has been selected as the case study. It receives power from 115 kV transmission systems and distribute to customers in 22 kV distribution systems. The studied network is simulated by computer program and voltage sags data in 2006 are used for analysis. In addition, contours of voltage level are created to forecast sag events.

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