Multilevel Converters as Series VAr Compensators

Authors: Mwinyiwiwa Bakari M. M.; Ooi B. T.; Wolanski Z.; Chen Y.

Abstract

This paper presents experimental results of a multilevel converter applied as a series static VArcompensator (SVS or STATCOM). An outer feedback loop maintains the VAr operating condition and inner feedback loops equalize the DC capacitor voltages. The delta connection of the transformer secondaries provide paths for zero sequence currents to flow. The tests show its capability for operation under normal balanced condition and under faulted conditions of single line and double line outages

Keywords: feedback; power convertors; power transmission lines; static VAr compensators; voltage control