DESIGN OF AN ACTIVE DC FILTER FOR A HVDC SYSTEM

Gayatri Mohapatra
Assistant Professor, Electrical Engineering Dept, ITER, SOA University
Bhubaneswar, Odisha gayatrim79@gmail.com

ABSTRACT

Active filter have become the most viable alternatives for the compensation of the harmonics in the power system analysis. These filters are able to reduce the harmonics percentage much lower than selective passive filters and also provide compensation for the loss occurring in the transmission system. This project basically deals with the operational characteristics of the active shunt filter design for a specific voltage rating irrespective of the load connected. This is basically used to reduce the harmonic component present in the output of the converter in the HVDC application. This basically deals with the detection of the percentage of harmonic content in the percentage of the fundamental by using the FFT analysis of the signal and the design the active filter with the concept of selective harmonics compensation for specific harmonic order.

Active filters are basically working with the concept of providing the same negative current in the passive filter part to cancel out the harmonic current making the load current/voltage harmonic free. This is being done by using a transformer in series with the passive filter branch.

KEYWORDS: HVDC, ADF (Active DC Filter), FFT (Fast Fourier Transform)