

Impact of Transient Voltage Generated by Valve Commutation on HVDC Transformer (11065)

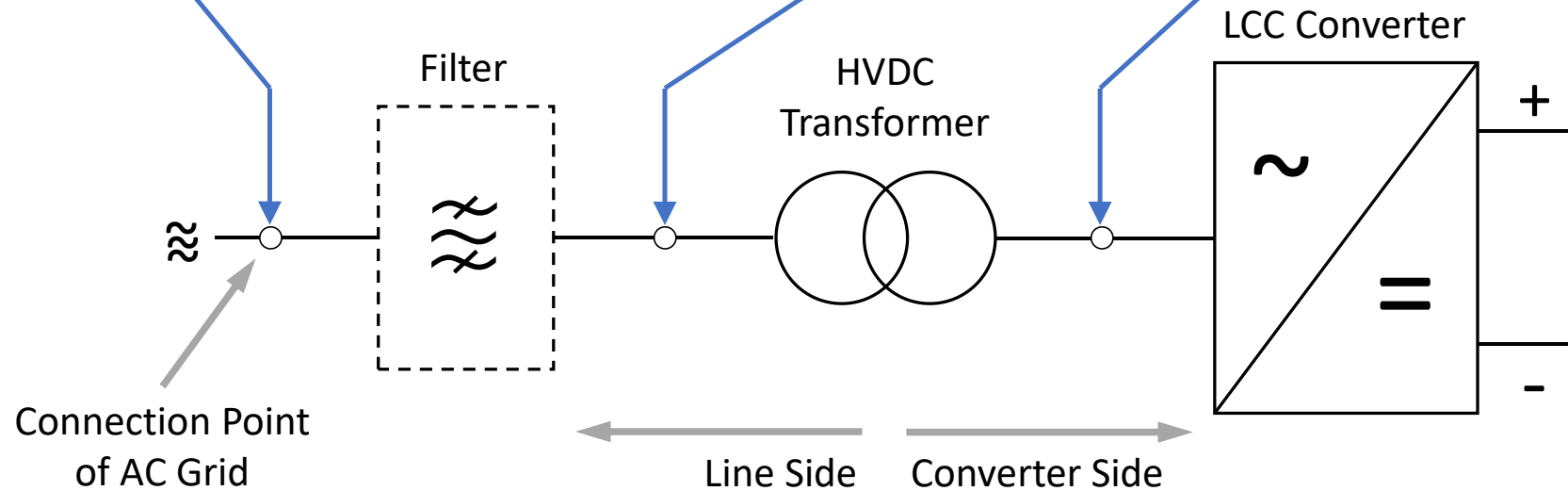
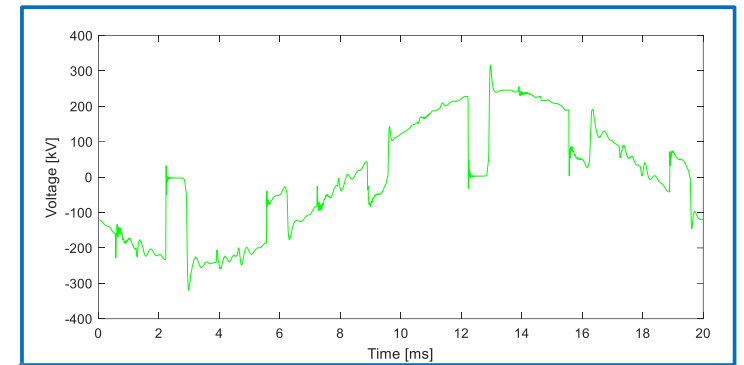
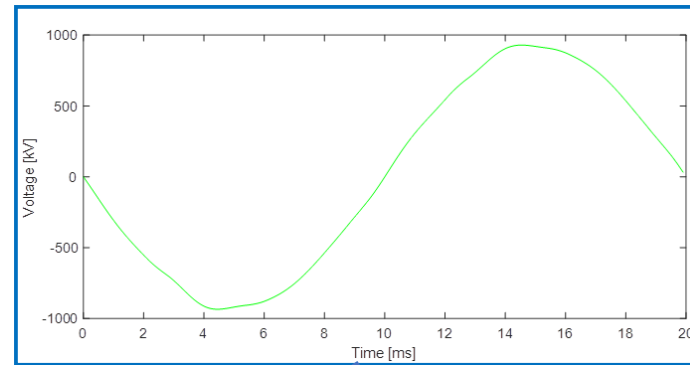
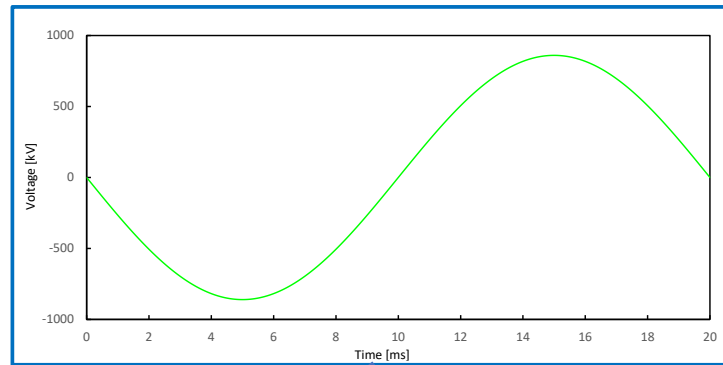
A2 / PS1-2

Question 1.6: : Is it necessary to decrease harmonics from power electronic devices in the network and how can this be done efficiently?

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Harmonics at AC Grid Connection Point of HVDC transmission



Conclusion

Answer:

In case of at the AC grid connection point the grid code with respect to acceptable THD cannot be kept due to harmonics additional measures like e. g. filters are necessary.

Harmonics can't be avoided at LCC technique (**L**ine-commutated **C**urrent-sourced **C**onverter) and level depends on operating conditions and system design. It needs also to be considered in the transformer design since the harmonics manifest themselves in additional losses.

Harmonics could be avoided also by using VSC technique (Self-commutated **V**oltage-**S**ourced **C**onverter) in combination with MMC technique (**M**odular **M**ultilevel **C**onverter). However, this selection of converter technology depends on various other criteria (e. g. loss production) as well.