

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

A2 / PS1-2

Question 1.4: Which requirements are necessary for HVDC converter transformers to do a risk and condition assessment to ensure that they will perform satisfactorily?

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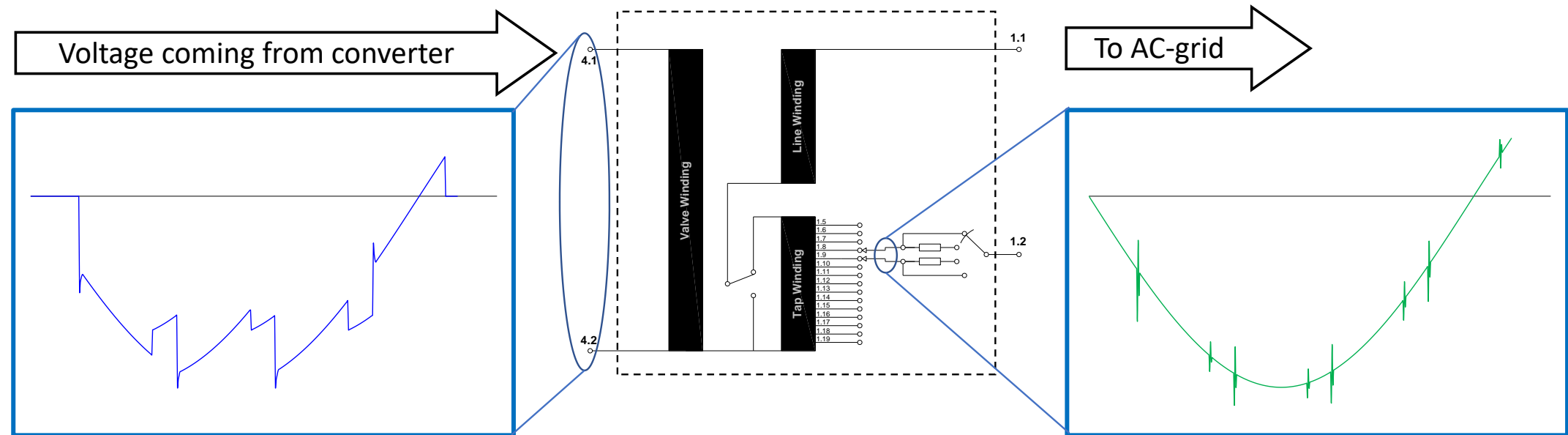


# Transient Stress at Tap Winding due to the Commutation Process

HVDC transformer are power transformers with specific requirements on:  
Harmonics / Transient Stresses / DC Currents / DC Offset Voltage / ...

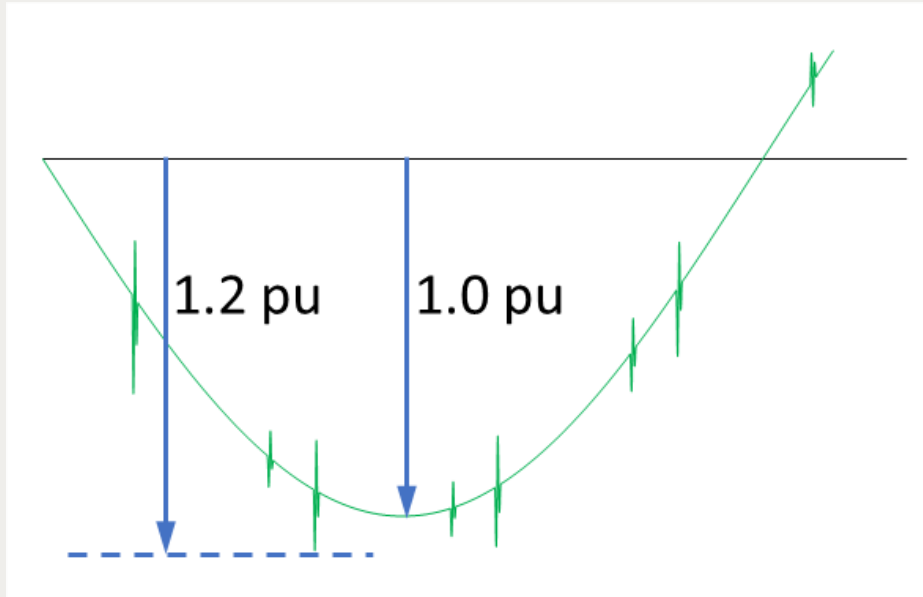
These specific requirements need be considered in the design

Example: transient stress on the converter side



# Conclusion

These transient stresses were investigated in the paper 11065



During IVPD test the tap winding was stressed with

- 1.82 p.u. (5min)
- 1.58 p.u. (60min)

## Answer:

No additional requirements are necessary for a safe and reliable operation of the converter transformer. The occurring transient stresses are sufficient covered by the transformer insulation coordination specification