

Comparative analysis of Protection scheme for HVDC converter against DC side fault

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A Thesis Submitted to
Gujarat Technological University
In Partial Fulfillment of the Requirements for
The Degree of Master of Engineering
In **Electrical Engineering**

OCT – 2016



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ABSTRACT

In this project, a protection scheme for HVDC converters (classical VSCs as well as MMCs) against dc-side faults is contemplated. The contemplated scheme provides complete segregation between the ac side and the HVDC converters during dc faults which allow the dc-link current to freely decay to zero (the grid current contribution into the dc fault is eliminated). This posses combining and connecting the double thyristor switches a cross the ac output terminals of the HVDC converter. The contemplated protection scheme provides advantages, such as lower dv/dt stresses and lower voltage rating of thyristor switches in accumulation to providing full segregation between the converter semiconductor devices and ac grid during dc-side faults. A simulation case study has been carried out to reveals the effectiveness of the contemplated scheme.