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Technical Brochures

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Design, test and application of HVDC circuit breakers

This Technical Brochure presents a comprehensive guides to the design, test and application of HVDC CBs. Starting with a summary of the relevant works carried out by other academic organizations, the Brochure first discusses HVDC system and conversion technologies in addition to the fault detection, identification and management strategies. Design insights of voltage grading, mechanical switching, control and protection, and condition monitoring of CBs are then discussed. Key functional requirement of HVDC CBs and their interactions with HVDC systems are specifically analyzed. This is followed by the proposed approaches for rating, modelling and real-time HIL tests of CB for a given HVDC system and protection strategy. Guide for defining the type-test requirements of HVDC CBs and their sub-components are provided together with the recommended circuits for current interruption test. Examples CBs installed in multi-terminal VSC-HVDC systems and these developed in laboratories are particularly presented together with the test circuits and obtained results of both manufacturer and on-site fault current tests.

More Informations :

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