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Edition 2.2 2015-07

CONSOLIDATED VERSION

VERSION CONSOLIDÉE

colour inside

Terminology for high-voltage direct current (HVDC) transmission

Terminologie pour le transport d'énergie en courant continu à haute tension (CCHT)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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TERMINOLOGY FOR HIGH-VOLTAGE DIRECT CURRENT (HVDC) TRANSMISSION

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In this Redline version, a vertical line in the margin shows where the technical content is modified by amendments 1 and 2. Additions and deletions are displayed in red, with deletions being struck through. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 60633 has been prepared by subcommittee 22F: Power electronics for electrical transmission and distribution systems, of IEC technical committee 22: Power electronics.

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TERMINOLOGY FOR HIGH-VOLTAGE DIRECT CURRENT (HVDC) TRANSMISSION

1 Scope

This International Standard defines terms for high-voltage direct current (HVDC) power transmission systems and for HVDC substations using electronic power converters for the conversion from a.c. to d.c. or vice versa.

This standard is applicable to HVDC substations with line commutated converters, most commonly based on three-phase bridge (double way) connections (see figure 2) in which unidirectional electronic valves, e.g. semiconductor valves, are used.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050-551~~:1998~~, *International Electrotechnical Vocabulary – Part 551: Power electronics*

IEC 60146-1-1~~:1991~~, *General requirements and line commutated convertors – Part 1-1: Specifications of basic requirements*

IEC 60617-5~~:1996~~, *Graphical symbols for diagrams – Part 5: Semiconductors and electron tubes*

IEC 60617-6~~:1996~~, *Graphical symbols for diagrams – Part 6: Production and conversion of electrical energy*

3 Symbols and abbreviations

The list covers only the most frequently used symbols. For a more complete list of the symbols which have been adopted for static converters see IEC 60027 and other standards listed in the normative references and the bibliography.

3.1 List of letter symbols

U_d	direct voltage (any defined value)
U_{d0}	~~conventional~~ nominal no-load direct voltage
U_{di0}	ideal no-load direct voltage
U_{dN}	rated direct voltage
U_L	line-to-line voltage on line side of converter transformer, r.m.s. value including harmonics
U_{LN}	rated value of U_L
U_{v0}	no-load phase-to-phase voltage on the valve side of transformer, r.m.s. value excluding harmonics