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Guidelines for operation and maintenance of line commutated converter (LCC) HVDC converter station

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National foreword

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Guidelines for operation and maintenance of line commutated converter (LCC) HVDC converter station

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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GUIDELINES FOR OPERATION AND MAINTENANCE OF LINE COMMUTATED CONVERTER (LCC) HVDC CONVERTER STATION

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IEC TR 63065, which is a technical report, has been prepared by IEC technical committee 115: High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
115/153/DTR	115/163/RVDTR

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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GUIDELINES FOR OPERATION AND MAINTENANCE OF LINE COMMUTATED CONVERTER (LCC) HVDC CONVERTER STATION

1 Scope

This Technical Report provides general guidance on basic principles and general proposals for the safe and economic operation and maintenance of an LCC converter station.

These guidelines are based on the operation and maintenance practices that have been used successfully during the last decades at HVDC converter stations all over the world, and can be referred to by new HVDC users to optimize operation and maintenance policy and assist in performing the operation and maintenance work.

This document focuses only on the operation and maintenance of the equipment inside an LCC converter station, including back-to-back HVDC systems. The operation and maintenance of HVDC overhead transmission lines, HVDC cables and voltage sourced converter (VSC) are not covered by this document.

NOTE Usually the agreement between the purchaser and the suppliers of the HVDC converter station includes specific requirements regarding contractual requirements of particular systems. Such specific requirements will supersede the general/typical description mentioned in this document and all functions mentioned in this document are not necessarily applicable for all systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60633, *Terminology for high-voltage direct current (HVDC) transmission*

IEC 60919 (all parts), *Performance of high-voltage direct current (HVDC) systems with line-commutated converters*

IEC 61975, *System tests for High-voltage direct current (HVDC) installations*

IEC TS 62672-1, *Reliability and availability evaluation of HVDC systems – Part 1: HVDC systems with line commutated converters*

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60633 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp