

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



### AMENDMENT 1 AMENDEMENT 1

**Power losses in voltage sourced converter (VSC) valves for high-voltage direct current (HVDC) systems –  
Part 2: Modular multilevel converters**

**Pertes de puissance dans les valves à convertisseur de source de tension (VSC) des systèmes en courant continu à haute tension (CCHT) –  
Partie 2: Convertisseurs multiniveaux modulaires**



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## FOREWORD

This amendment has been prepared by subcommittee 22F: Power electronics for electrical transmission and distribution systems, of IEC technical committee 22: Power electronic systems and equipment.

The text of this amendment is based on the following documents:

|             |                  |
|-------------|------------------|
| CDV         | Report on voting |
| 22F/479/CDV | 22F/488B/RVC     |

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

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

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## 2 Normative references

*Add the following new reference:*

IEC 61803, *Determination of power losses in high-voltage direct current (HVDC) converter stations*

### 3.1.11 no-load operating state

*Add, after the existing definition, the following new note:*

Note 1 to entry: In the no-load state, in principle no switching should occur as the valve is blocked. However, in some designs, it may be necessary to make occasional switching operations to balance voltages between different parts of the converter. Here, some losses may occur and need to be accounted for.