

TECHNICAL SPECIFICATION

Commissioning of VSC HVDC systems



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Commissioning of VSC HVDC systems

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COMMISSIONING OF VSC HVDC SYSTEMS

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The language used for the development of this Technical Specification is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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COMMISSIONING OF VSC HVDC SYSTEMS

1 Scope

This document, which is a technical specification, applies to the commissioning of voltage-sourced converter (VSC) high voltage direct current (HVDC) systems which consist of two converter stations and the connecting HVDC transmission line.

The tests are generally applied to all HVDC configurations and could require addition or deletion to match the given solution.

This document provides guidance on the planning of commissioning activities. The commissioning described in this document is implemented through on-site testing on the whole system functionality, including testing on the subsystem and system. This document provides the scope, procedures and acceptance criteria of the tests.

Factory system tests, on-site equipment tests, electrode tests, and trial operation are not included in this document.

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 60633:2019, *High-voltage direct current (HVDC) transmission – Vocabulary*

IEC 62747:2014, *Terminology for voltage-sourced converters (VSC) for high-voltage direct current (HVDC) systems*
IEC 62747:2014/AMD1:2019

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62747 and IEC 60633 as well as the following apply.

3.1 Test classification terms

3.1.1

factory system tests

FST

tests which are performed in a factory of HVDC control and protection equipment to verify the main functions and performances as well as the interface with VSC valve, optical measuring devices, etc.

Note 1 to entry: It is also referred to as a functional/dynamic performance test (FPT/DPT).

3.1.2

on-site equipment tests

electrical and mechanical tests which are performed on-site on a single equipment to verify that no equipment damage has occurred during transport and site assembly, and that installation has been correctly performed