IEC TS 63042-103

Edition 1.0 2025-09

TECHNICAL SPECIFICATION

UHV AC transmission systems -
Part 103: Security and stability requirements for system planning and design

ICS 29.240.01

ISBN 978-2-8327-0679-4

IEC TS 63042-103:2025-09(en)

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UHV AC transmission systems - Part 103: Security and stability requirements for system planning and design

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IEC TS 63042-103 has been prepared by IEC technical committee 122: UHV AC transmission systems. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
122/198/DTS	122/203/RVDTS

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

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.

A list of all parts in the IEC 63042 series, published under the general title *UHV AC transmission systems*, can be found on the IEC website.

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

– reconfirmed,

– withdrawn, or

– revised.

INTRODUCTION

The size and mass of the UHV AC systems are larger than those of other voltage levels, and their large power fluctuation strongly impacts the security operation of the power systems. On the other hand, there are few power sources directly connected to the UHV AC systems, resulting in insufficient system support and regulation capability. The operation of the UHV AC systems operates with other voltage levels co-ordinately. Furthermore, the aggravation of the load and the access of large renewable energy has led to higher requirements for the secure and stable operation of the power grid with UHV AC systems. More attention should be paid to coordinated control between the units and grids, AC systems and DC systems. All of the above are different from other voltage levels of AC systems. Therefore, safety and stability specifications are becoming a priority for UHV AC transmission systems.

This document provides the basic requirements for the secure and stable operation of the UHV AC transmission systems, the criteria and the assessment of security and stability for UHV AC transmission systems.

This document is applicable to power grids of UHV AC systems and their associated equipment and connected systems.

1 Scope

This part of IEC 63042 specifies the basic security and stability requirements for UHV AC transmission systems in planning and design, the security and stability criteria, and the security and stability analysis method for the UHV AC transmission systems.

2 Normative references

There are no normative references in this document.