PD IEC TS 63042-301:2018

BSI Standards Publication

UHV AC transmission systems

Part 301: On-site acceptance tests

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee GEL/8, Systems Aspects for Electrical Energy Supply.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2018

ISBN 978 0 580 97318 5

ICS 29.240.01

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 December 2018.

Amendments/corrigenda issued since publication

Date	Text affected

IEC TS 63042-301

Edition 1.0 2018-12

TECHNICAL SPECIFICATION

UHV AC transmission systems – Part 301: On-site acceptance tests

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 29.240.01

ISBN 978-2-8322-6297-9

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 63042-301, which is a Technical Specification, has been prepared by IEC technical committee 122: UHV AC transmission systems.

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

Enquiry draft	Report on voting
122/57/DTS	122/65A/RVDTS

Full information on the voting for the approval of this technical specification 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.

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 "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- withdrawn,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.

INTRODUCTION

With the increase in voltage levels, the reliability and safety of high-voltage electric equipment is facing new challenges. There is a need to have consensus on a series of technical criteria and requirements for on-site acceptance tests for electrical equipment of UHV AC transmission systems exceeding 800 kV to detect the damages or abnormal conditions that may occur during the transportation and installation processes and to determine whether equipment can be put into operation reliably and safely for power systems.

This Technical Specification proposes on-site acceptance tests, relevant test items, test methods, and evaluation criteria for transformers, circuit breakers, GIS, surge arresters, voltage and current transformers, shunt reactors, series compensators, insulators, disconnectors, earthing switches and high-speed earthing switches.

UHV AC transmission systems –

Part 301: On-site acceptance tests

1 Scope

This part of IEC 63042, which is a technical specification, applies to on-site acceptance tests of electrical equipment with the highest voltages of AC transmission system exceeding 800 kV.

The electrical equipment exceeding 800 kV includes the following items:

- power transformers;
- circuit breakers;
- gas insulated switchgear (GIS);
- surge arresters;
- voltage and current transformers;
- shunt reactors;
- series compensators;
- insulators;
- disconnectors and earthing switches;
- high-speed earthing switches.

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 60376, *Specification of technical grade sulfur hexafluoride (SF_6) for use in electrical equipment*

IEC 60480, *Guidelines for the checking and treatment of sulfur hexafluoride (SF_6) taken from electrical equipment and specification for its re-use*

IEC 62271-1:2017, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

IEC 62271-4, *High-voltage switchgear and controlgear – Part 4: Handling procedures for sulphur hexafluoride (SF_6) and its mixtures*

IEC 62271-100:2008, *High-voltage switchgear and controlgear – Part 100: Alternating current circuit-breakers*

IEC 62271-102:2018, *High-voltage switchgear and controlgear – Part 102: Alternating current disconnectors and earthing switches*

IEC 62271-112:2013, *High-voltage switchgear and controlgear – Part 112: Alternating current high-speed earthing switches for secondary arc extinction on transmission lines*