

TECHNICAL REPORT



Unified power flow controller (UPFC) installations – System tests

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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SYSTEM TESTS****FOREWORD**

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INTRODUCTION

IEC TR 63262:2019 introduces the importance of the system tests of unified power flow controller (UPFC) installations and gives the test items of the system tests. However, the details of the system tests of UPFC installations, including test methods and test procedures, are not given. For the commercial use of UPFC installations, this document provides the details of the system tests of UPFC installations for reference. The system tests are to verify the quality of UPFC after on-site installation and integration, the coordination between a UPFC installation and the grid, the fault ride-through performance of the UPFC installation and so on, which make the commercial operation of the UPFC installation more efficient and safer.

This document summarizes the system test experience of the existing UPFC projects, and the content has been verified by several years of stable operation of the UPFC projects.

UNIFIED POWER FLOW CONTROLLER (UPFC) INSTALLATIONS – SYSTEM TESTS

1 Scope

This document provides the general information, items, conditions, and evaluation of test results for on-site system tests of unified power flow controller (UPFC) installations based on modular multi-level converter (MMC) technology. For special functions or performances that are claimed by specific projects, some extra test items not included in this document can be added according to the technical specification.

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 TR 63262:2019, *Performance of unified power flow controller (UPFC) in electric power systems*