

P1899

Submitter Email: raohong@csg.cn

Type of Project: Modify Existing Approved PAR

PAR Request Date: 18-May-2016

PAR Approval Date: 30-Jun-2016

PAR Expiration Date: 31-Dec-2017

Status: Modification to a Previously Approved PAR

Root PAR: P1899 **Approved on:** 21-Oct-2013

1.1 Project Number: P1899

1.2 Type of Document: Guide

1.3 Life Cycle: Full Use

2.1 Title: Guide for Establishing Basic Requirements for High-Voltage Direct Current (HVDC) Transmission Protection and Control Equipment
Changes in title: ~~Standard~~ **Guide** for Establishing Basic Requirements for High-Voltage Direct Current (HVDC) Transmission Protection and Control Equipment

3.1 Working Group: Working group for establishing Basic Requirements for ultra high-voltage direct-current (UHVDC) transmission control and protection (BOG/CAG/wg-uhvdc-tcp)

Contact Information for Working Group Chair

Name: Hong Rao

Email Address: raohong@csg.cn

Phone: +8602038120858

Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE-SA Board of Governors/Corporate Advisory Group (BOG/CAG)

Contact Information for Sponsor Chair

Name: Philip Wennblom

Email Address: wennblom@ieee.org

Phone: 408-765-4437

Contact Information for Standards Representative

None

4.1 Type of Ballot: Entity

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 06/2016

4.3 Projected Completion Date for Submittal to RevCom

Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 02/2017

5.1 Approximate number of entities expected to be actively involved in the development of this project: 15

5.2 Scope: This guide specifies the basic norms for protection and control equipment of High-Voltage Direct Current (HVDC) transmission systems that have the voltage range up to and including 800kV. It also defines and specifies requirements for control and protection equipment used in the design, manufacturing, research and testing of HVDC control and protection equipment.

These guidelines apply to the control and protection equipment for monopolar and bipolar and two-terminal LCC (line commutated converter) HVDC systems with the main circuit structure of one 12-pulse converter or two series 12-pulse converters per station pole. This guidance can also be used as reference for HVDC applications with other topologies like back-to-back links, parallel converter systems, and multi-terminal/multi-circuit HVDC transmissions .

Changes in scope: This ~~standard~~ **guide** specifies the basic norms for protection and control equipment of **High-Voltage Direct Current (HVDC)** transmission systems that have the voltage range up to and including 800kV. ~~The standard~~ **also** defines and specifies requirements for control and protection equipment used in the design, manufacturing, research and testing of ~~secondary~~ **HVDC control and protection equipment**. These guidelines apply to the control and protection equipment for monopolar and bipolar and two-terminal LCC (line commutated converter) HVDC systems with the main circuit structure of one 12-pulse converter or two series 12-pulse converters per station pole. This guidance can also be used as reference for HVDC applications with other topologies like back-to-back links, parallel converter systems, and multi-terminal/multi-circuit HVDC transmissions .

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: This document will not include a purpose clause.

5.5 Need for the Project: HVDC transmission system provides significant benefits for bulk power transmission over long distance. For HVDC

transmission system, the control and protection system plays an essential role in the overall performance of the transmission system.

Up to present, there is no international standard/guide for control and protection equipment of HVDC transmission systems. The relevant international standards, such as IEC 802.3 and IEEE 1003.1, are only for the telecommunications and information exchange between systems, or portable operating system interface. Therefore this urgent need should be met for HVDC power transmission control and protection equipment, while more and more HVDC projects are being built.

This guide applies to protection and control equipment for HVDC transmission systems up to and including 800kV, which defines and specifies requirements for control and protection equipment in the design, manufacturing, research and testing of secondary circuit system and can also be used as a reference for project construction and operation departments.

5.6 Stakeholders for the Standard: The stakeholders for are manufacturers, design units and research institutes.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: Yes

If Yes please explain: Specifications for control and protection equipment of +/-800kV ultra high voltage direct current transmission.

and answer the following

Sponsor Organization: Standardization Administration of the People's Republic of China

Project/Standard Number: GB/Z 25843-2010

Project/Standard Date: 23-Oct-2010

Project/Standard Title: Specifications for control and protection equipment of +/-800kV ultra high voltage direct current transmission.

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes: Currently, there is no international **standard/guide** specially formulated for control and protection equipment for UHVDC applications. The Chinese national standard draft "Specifications for control and protection equipment of +/-800kV ultra high voltage direct current transmission" can be utilized as a starting point for the development of this **guide**.

Referencing Section 5.2, the explanation for modifying the PAR to develop a guide rather than a standard is as follows:

Functional requirements on control and protection equipment in an HVDC transmission system vary widely according to the overall project/system characteristics. A guide, which will define recommendations and alternate approaches, is believed to be more appropriate, rather than mandating requirements in a standard, that may not apply to all situations. A user can then apply the guidelines of P1899 to the unique project situation.