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**Electrical energy storage (EES) systems
— Safety requirements for grid-integrated
EES systems — Electrochemical-based
systems**

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Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by The Institute of Electrical Engineers of Japan (IEEJ)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act.

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Electrical energy storage (EES) systems — Safety requirements for grid-integrated EES systems — Electrochemical-based systems

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 62933-5-2 : 2020**, Edition 1, with some modifications of the technical contents to reflect the unique conditions in Japan.

Annex JA to Annex JF contain the contents derived from **IEC TS 62933-5-1 : 2017**, and are not given in the corresponding International Standard. The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JG.

1 Scope

This Standard provides safety requirements for battery energy storage system (BESS) which is a grid-connected electrical energy storage system where a battery-like electrochemical storage subsystem is used. It primarily describes safety aspects for people and, where appropriate, safety matters related to the surroundings and living beings.

Electrical energy storage (EES) system includes any type of grid-connected BESS which can both store electrical energy from a grid or any other source and provide electrical energy to a grid.

Unidirectional energy storages which only receive the supply of electrical power from a grid, such as UPS, are not included in the scope of this Standard.

This safety standard is applicable to the entire life cycle of BESS (from design to end of service life management).

This Standard provides further safety provisions that arise due to the use of an electrochemical storage subsystem in energy storage systems that are beyond the general safety considerations described in Annex JA to Annex JF.

This Standard specifies the safety requirements of an “electrochemical” energy storage system as a “system” to reduce the risk of harm or damage caused by the hazards of an electrochemical energy storage system due to interactions (e.g. chain of failures) between the subsystems (e.g. battery system and AC/DC converter) as presently understood.

NOTE 1 Types of grids are provided in JB.1.

NOTE 2 While the corresponding International Standard cites IEC TS 62933-5-1 : 2017 as one of its the normative references, this Standard has directly incorporated the contents of the said IEC in Annex JA to Annex JF and