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BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Responsible Committee Secretary: Ms Nicola Young (BSI)

Direct tel:

E-mail: nicola.young@bsigroup.com

Full document details: 21/30420780 DC

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



120/245/CD

COMMITTEE DRAFT (CD)

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SUPERSEDES DOCUMENTS:
120/181/NP, 120/184/RVN

IEC TC 120 : ELECTRICAL ENERGY STORAGE (EES) SYSTEMS	
SECRETARIAT: Japan	SECRETARY: Mr Hideki HAYASHI
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 8,TC 21,SC 21A,TC 22,TC 57,TC 69	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☒ SAFETY	

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Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Electrical energy storage (EES) systems Part 5-3: Safety requirements for electrochemical based EES systems considering initially non-anticipated modifications - partial replacement, changing application, relocation and loading reused battery -

NOTE FROM TC/SC OFFICERS:

This CD has been well discussed by WG5 experts. WG5 experts proposed circulation of this CD.

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CONTENTS

1		
2		
3	FOREWORD	4
4	INTRODUCTION	6
5	1 Scope	7
6	2 Normative references	7
7	3 Terms and definitions	7
8	4 Guidelines for safety when performing unplanned modifications	8
9	4.1 General	8
10	5 Changes to an accumulation subsystem	9
11	5.1 General	9
12	5.2 Changes of energy storage capacity	10
13	5.2.1 General	10
14	5.2.2 Safety requirements in the re-design phase	10
15	5.2.3 Safety requirements in the installation and commissioning phase	10
16	5.2.4 Safety requirements for the operation and maintenance	11
17	5.3 Changes of the cell chemistry and cell design	12
18	5.3.1 General	12
19	5.3.2 Safety requirements in the re-design phase	12
20	5.3.3 Safety requirements in the installation and commissioning phase	13
21	5.3.4 Safety requirements for the operation and maintenance	13
22	6 Changes on system components using non-OEM parts	15
23	6.1 General	15
24	6.2 Safety requirements in the re-design phase	15
25	6.3 Safety requirements in the installation and commissioning phase	16
26	6.4 Safety requirements for the operation and maintenance	16
27	7 Changes to mode of operation	18
28	7.1 General	18
29	7.2 Safety requirements in the re-design phase	18
30	7.3 Safety requirements in the installation and commissioning phase	18
31	7.4 Safety requirements for the operation and maintenance	19
32	8 Changes of installation site	20
33	8.1 General	20
34	8.2 Safety requirements in the re-design phase	20
35	8.3 Safety requirements in the installation and commissioning phase	20
36	8.4 Safety requirements for the operation and maintenance	21
37	9 Reuse or repurpose batteries	22
38	9.1 General	22
39	9.2 Safety requirements in the design phase	22
40	9.2.1 General requirement in the design phase	22
41	9.2.2 Estimation of residual usable period and performance	23
42	9.2.3 Re-design of safety	23
43	9.3 Safety requirements in the installation and commissioning phase	24
44	9.4 Safety requirements for the operation and maintenance	25
45	Annex A (informative) An example of a safety validation method when performing unplanned	
46	modifications of a BESS using Lithium ion batteries	26
47	A.1 General	26
48	A.2 Estimation methods for deterioration of lithium-ion battery	26

49	A.3 Safety estimation of BESS by deterioration estimation method	26
50	Bibliography	28
51		
52	Figure 1 – Major modifications and their classification.....	8
53	Figure 2 – Examples of relevant stakeholders	9
54	Figure 3 – An example of BESS architecture.....	9
55	Figure 4 – Life cycle of reuse/repurpose battery	22
56	Figure A.1– An example of BESS mounted a safety estimation function	27
57	Figure A.2 – An example of safety assessment network using estimation function	27
58		
59	Table 1 – Examples of different batteries chemistry modifications and their categorization	12
60	Table 2 – Example of subsystems or components related safety	15
61		
62		
63		

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL ENERGY STORAGE (EES) SYSTEMS

**Part 5-3: Safety requirements when performing unexpected modification
of electrochemical based EES systems**

FOREWORD

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International Standard IEC 62933-5-3 has been prepared by IEC technical committee 120: Electrical Energy Storage (EES) Systems.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
120/XX/FDIS	120/XX/RVD

Full information on the voting for the approval of this International Standard 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.

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,

- 115 • replaced by a revised edition, or
116 • amended.

117

118 The National Committees are requested to note that for this document the stability date
119 is 202X..

120 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED
121 AT THE PUBLICATION STAGE.

122

INTRODUCTION

Modifications that are made to an BESS over its lifetime cannot be covered in the initial design or planning.

The unplanned modifications require a careful evaluation of their potential impact on the safety of the BESS. The document provides guidance for the steps and activities to be carried out when a modification of the BESS is planned and carried out. Such a modified BESS requires additional attention during its operation and ultimate disposal.

Unplanned modifications which are dealt with in this standard are:

- changes of energy storage capacity
- changes of the cell chemistry and cell design
- changes of the manufacture of system components
- changes of mode of operation
- changes of installation site
- reusing/repurposing battery

ELECTRICAL ENERGY STORAGE (EES) SYSTEMS

Part 5-3: Safety requirements when performing unexpected modification of electrochemical based EES systems

1 Scope

This document is applicable to all instances when an electrochemical based EES system is undergoing unplanned modifications. Such modifications can involve one or more of the following:

- Energy storage capacity adjustments
- Changes of the chemistry, design or manufacturer of batteries
- Subsystem component substitutions
- Changes of mode of operation
- Changes of installation site
- installation of reused or repurposed batteries

When such modifications are carried out, the original state of safety of the BESS shall not be impaired.

The requirements to achieve safe modifications of the BESS are detailed in this standard. The requirements covered by this document are applied in addition to the requirements in IEC 62933-5-2 in accordance with each situation.

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 62933-1, *Electrical Energy Storage (EES) systems - Part 1: Vocabulary*

IEC TS 62933-5-1, *Electrical Energy Storage (EES) systems – Part 5-1: Safety considerations for grid integrated EES systems – general specifications*

IEC 62933-5-2, *Electrical Energy Storage (EES) systems – Part 5-2: Safety requirements for grid integrated EES systems – electrochemical based system*

3 Terms and definitions

3.1 battery energy storage system BESS

electrical energy storage system with accumulation subsystem based on batteries with secondary cells

Note 1 to entry: The battery energy storage system includes a flow battery energy system (IEC 62932-1:2020, 3.1.15).

Note 2 to entry: Batteries are defined in IEC 60050-482:2004, 482-01-04, and secondary cells are defined in IEC 60050-482:2004, 482-01-03.

3.2 unplanned modification

modifications that are not specified in the plan formulated (which stipulates operational policies and schedules for modifications or maintenance) and that have not been previously evaluated by starting operation of the BESS