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Date: 09 December 2021
Origin: International**Latest date for receipt of comments: 29 December 2021**

Project No. 2020/00983

Responsible committee: ESL/120 Electrical Energy Storage Interested committees:

Title: BS EN IEC 62933-4-2 Electric Energy Storage Systems

Part 4-2: Assessment of the environmental impact of battery failure in an electrochemical based storage system

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

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- iii) requires additional national guidance or information

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Responsible Committee Secretary: **Ms Nicola Young (BSI)**
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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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.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.	



120/255/CD

COMMITTEE DRAFT (CD)

PROJECT NUMBER:

IEC 62933-4-2 ED1

DATE OF CIRCULATION:

2021-12-03

CLOSING DATE FOR COMMENTS:

2022-01-28

SUPERSEDES DOCUMENTS:

120/177/NP, 120/183A/RVN

IEC TC 120 : ELECTRICAL ENERGY STORAGE (EES) SYSTEMS

SECRETARIAT:

Japan

SECRETARY:

Mr Hideki HAYASHI

OF INTEREST TO THE FOLLOWING COMMITTEES:

TC 21,SC 21A,TC 111,ACEA

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

This document is still under study and subject to change. It should not be used for reference purposes.

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:

Electric Energy Storage Systems - Part 4-2- Assessment of the environmental impact of battery failure in an electrochemical based storage system

NOTE FROM TC/SC OFFICERS:

This CD was discussed by TC120 WG4 experts. As a result, the title has been changed to the appropriate wording.

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CONTENTS

1		
2		
3	FOREWORD.....	4
4	1 Scope.....	6
5	2 Normative references	7
6	3 Terms, definitions, abbreviated terms and symbols.....	7
7	4 General Information.....	8
8	4.1 General.....	8
9	4.2 Classification of BESS Types.....	8
10	4.3 Schematic view of the failing component groups in a BESS	9
11	4.4 Failure of the electrochemical core (batteries).....	9
12	4.5 General considerations and guidelines for the assessment of the	
13	environmental impact of cell failures	11
14	5 Description of the key components of cells, cell stacks and batteries used in BESS	
15	applications	12
16	5.1 General.....	12
17	5.2 Cells with non-aqueous electrolyte – C-A type	12
18	5.3 Cells with aqueous electrolyte – C-B type	12
19	5.4 Cells with solid electrolyte operating at temperatures above 250°C – C-C	
20	type	13
21	5.5 Cells with aqueous but recirculating electrolyte or flow cells - C-D type	13
22	5.6 Cell with any other electrochemical couple, electrolyte and energy storage	
23	concepts or combinations thereof – C-Z type	14
24	6 Aggregates of causes resulting possibly in failed electrochemical batteries with	
25	associated negative impacts on the environment	14
26	Annex A (informative) Summary list of typical properties of commercially available	
27	electrochemical energy storage systems for BESS duty.....	16
28	Annex B (normative) Forms for reporting the assessment of the negative	
29	environmental impact of a failed battery system.....	20
30	Annex C (informative) Annex title	24
31	Bibliography.....	24
32		
33	Figure 1 – Schematic view of the scope of the standard.....	6
34	Figure 2 – BESS failures – The failures sites within the scope of the standard are	
35	shaded in grey	9
36	Figure 3 – An example of BESS structure with the location of the electrochemical core	
37	outlined.....	10
38	Figure 4 – Topography of the proximate root causes resulting in the failure of the	
39	electrochemical core of the BESS and ensuing negative impact on the environment.....	11
40	Figure C.1 – BESS application scenarios.....	24
41		
42	Table 1 – Classification of BESS Types	8

43	Table A.1 – Summary list of typical properties of commercially available	
44	electrochemical energy storage systems for BESS duty – Part 1	16
45	Table A.2 – Summary list of typical properties of commercially available	
46	electrochemical energy storage systems for BESS duty - Part 2	18
47	Table B.1 – The environmental impact assessment Form, Part 1 Object description	20
48	Table B.2 – Environmental impact assessment Form, ...	21
49	Part 2 Failure and environmental impact description	21
50	Table B.3 –	22
51	Example of a completed form B.1 showing the desirable degree of data granularity in	
52	the description of the battery of the BESS.....	22
53	(The content shown is for example only)	22
54	Table B.4 –	23
55	Example of a completed form B.2 showing the desirable degree of data granularity in	
56	the description of the failure and related environmental impact	23
57	(The content shown is for example only)	23
58		
59		
60		

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

Part 4-2: Assessment of the environmental impact of battery failure in an electrochemical based storage system

FOREWORD

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- IEC 62933-4-2 has been prepared by IEC technical committee 120: Electrical Energy Storage (EES) Systems. It is an International Standard.

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

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

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

111 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
112 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement,
113 available at www.iec.ch/members_experts/refdocs. The main document types developed by
114 IEC are described in greater detail at www.iec.ch/standardsdev/publications.

115 The committee has decided that the contents of this document will remain unchanged until the
116 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
117 specific document. At this date, the document will be

- 118 • reconfirmed,
- 119 • withdrawn,
- 120 • replaced by a revised edition, or
- 121 • amended.

122

ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

Part 4-2: Assessment of the environmental impact of battery failure in an electrochemical based storage system

1 Scope

This part of IEC 62933 defines the requirements and structure for the evaluation and reporting of the impact on the environment, from a failure of the electrochemical core of the battery-based energy storage system (BESS), i.e. the cell, battery, or cell stack due to internal and exogenous causes.

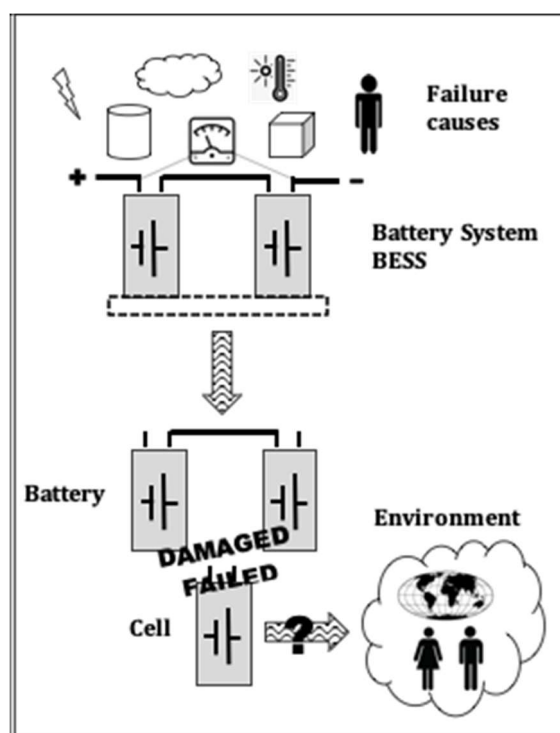


Figure 1 – Schematic view of the scope of the standard

This failure may result in a negative impact to the environment in which the BESS exists.

The environmental impacts caused by the failure of other components of the BESS system are not within the scope of this standard.

The standard is applicable to BESSs with electrochemical batteries.

The mainstream battery chemistries currently used in BESS are categorized according to the nature of their electrolyte.

These electrolyte types are nonaqueous, aqueous, solid and operating at 250 °C and electrolytes that are aqueous but recirculating.

The resulting cells and batteries are categorized in the IEC 62933 series with the designations C-A, C-B, C-C, C-D and C-Z.

This designation is for information only and does not intervene directly in the environmental impact assessment of resulting cell failures

2 Normative references

The following document is 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 TS 62933-4-1: 2017, *Electrical energy storage (EES) systems – Part 4-1: Guidance on environmental issues – General specification*

3 Terms, definitions, abbreviated terms and symbols

3.1

cell

basic functional unit, consisting of an assembly of electrodes, electrolyte, container, terminals and usually separators, that is a source of electric energy obtained by direct conversion of chemical energy

[SOURCE: IEC 60050-482:2004/AMD1: 2016, 482-01-01, modified – Note has been deleted.]

3.2

battery

one or more cells fitted with devices necessary for use, for example case, terminals, marking and protective devices

[SOURCE: IEC 60050-482:2004/AMD1: 2016, 482-01-04]

3.3

cell stack

group of flow cells, assembled in a contiguous form and usually connected electrically in series

3.4

battery system

Assembly of cells or flow cells installed on racks or in cabinets with associated electrical, electromechanical, environmental control components and ready to operate

3.5

failure

loss of ability of the cell, battery or cell stack to perform as required. This failure results in a fault of the cell or cell stack and by derivation of the BESS.

[SOURCE: IEC 60050-821:2004, 821-11-19, modified – cell, battery, cell stack and BESS terms added]

3.6

failure cause

set of circumstances that leads to failure

Note 1 to entry: A failure cause may originate during specification, design, manufacture, installation, operation or maintenance of an item.

[SOURCE: IEC 60050-192: 2016, 192-03-11.]

3.7

environment

the surroundings in which the BESS exists, including air, water, land, natural resources, flora, fauna, humans and their interrelations