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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42314-2023

**Guide for hazard sources identification of electrochemical
energy storage station**

电化学储能电站危险源辨识技术导则

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42314-2023 covers how the hazards inside an electrochemical energy storage station are found, described and ranked. The overall requirements tie the exercise to the laws, regulations and technical standards in force and to the hazardous and harmful factors actually present on the site, so that the list is station-specific rather than generic. The identification methods clause sets out the techniques the work may use - the safety checklist, preliminary hazard analysis, the operating condition hazard assessment and the analytic hierarchy process - each set out in an informative annex, so that two teams looking at the same station reach comparable findings. The longest clause is the identification content, which works through the hazard sources carried by the equipment and facilities themselves, down to items such as electrical clearance in a hydrogen supply pipeline or a missing confirmation on secondary containment. A final clause turns those findings into hazard levels, which lets an operator separate what needs an engineered control from what

can be managed by procedure. A hazard nobody has written down is a hazard nobody has assigned a control to, and a room full of stored electrochemical energy gives little warning before it becomes a fire. Written for the owners, designers and operating staff of energy storage stations and for the assessors who review their safety documentation.

This document specifies the content of hazard sources identification and the requirements for

hazard level classification of electrochemical energy storage stations, and describes the method

of hazard sources identification.

This document is applicable to the hazard sources identification in the operation, overhaul, maintenance and testing of electrochemical energy storage stations using lithium-ion batteries,

flow batteries, lead-acid (carbon) batteries, sodium-ion batteries and water electrolysis hydrogen production / fuel cells as the carrier.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 6441 The Classification for Casualty Accidents of Enterprise Staff and Workers

GB/T 13861 Classification and Code for the Hazardous and Harmful Factors in Process

GB 18218 Identification of Major Hazard Installations for Hazardous Chemicals

DL/T 2528 Basic Terminology of Electrical Energy Storage

3 Terms and Definitions

What is defined in DL/T 2528, and the following terms and definitions are applicable to this document.

3.1 hazard sources

The sources or conditions that may result in personal injury, property damage or environmental destruction.

[source: NB/T 10575-2021, 3.1, modified]

3.2 hazard sources identification

Identify the existence of hazard sources and determine hazardous factors and harmful factors

that may cause personal injury, property damage or environmental destruction.

[source: NB/T 10575-2021, 3.2]

3.3 hazardous factors

Factors that can cause casualties to people, relatively large losses to property or sudden destruction to the environment.

[source: NB/T 10575-2021, 3.3, modified]

3.4 harmful factors

Factors that can affect people's physical health, cause diseases, or certain losses to property, or

chronic damage to the environment.

[source: NB/T 10575-2021, 3.4, modified]

4 Overall Requirements

4.1 The identification of hazard sources of electrochemical energy storage stations shall be based on relevant laws, regulations and technical standards, identify various hazardous and

harmful factors existing in the electrochemical energy storage stations, and identify various hazard sources of the electrochemical energy storage stations.

4.2 The identification of hazard sources of electrochemical energy storage stations shall cover

all equipment, facilities, sites, operation and overhaul operation activities of the electrochemical

energy storage stations.

4.3 The identification of hazard sources of electrochemical energy storage stations shall

include

unsafe conditions of equipment and facilities, unsafe behaviors of people, and unsafe factors of

the environment, etc.

4.4 The classification of hazardous and harmful factors of electrochemical energy storage stations shall be carried out in accordance with the stipulations of GB/T 13861, and the classification of possible impacts shall be carried out in accordance with the stipulations of GB/T 6441.

4.5 In accordance with the hazard level, the hazard sources of electrochemical energy storage

stations can be classified into major hazard sources and general hazard sources. Those that may

cause casualties or property losses that reach the stipulations of Regulations on Reporting, Investigation and Handling of Production Safety Accidents, and the types and quantities of hazardous chemicals that reach the stipulations of GB 18218 are major hazard sources; those

that do not reach the above-mentioned stipulations are general hazard sources. In accordance

with the hazard level, general hazard sources are divided into three levels: Level-I, Level-II and

Level-III.

4.6 The electrochemical energy storage stations shall regularly carry out hazard sources identification. In accordance with the hazard sources identification results, establish and improve corresponding safety management systems, set up safety signs, and meanwhile, carry

out hazard sources registration, filing, archiving and problem rectification.

4.7 After the renovation and expansion of the electrochemical energy storage stations, or when

the service conditions of the equipment and the environment, in which, the equipment operates,

are significantly changed, hazard sources identification shall be re-conducted.