

# National standard accuracy requirements for energy storage

Are battery energy storage systems safe?

WASHINGTON, D.C., March 28, 2025 -- Today, the American Clean Power Association (ACP) released a comprehensive framework to ensure the safety of battery energy storage systems (BESS) in every community across the United States, informed by a new assessment of previous fire incidents at BESS facilities.

Are energy storage facilities safe?

"The energy storage industry is committed to a proactive and tireless approach to safety and reliability. At its core, energy storage facilities are critical infrastructure designed to protect people from power outages," said ACP VP of Energy Storage Noah Roberts.

What is an energy storage system (ESS)?

Covers an energy storage system (ESS) that is intended to receive and store energy in some form so that the ESS can provide electrical energy to loads or to the local/area electric power system (EPS) when needed. Electrochemical, chemical, mechanical, and thermal ESS are covered by this Standard.

How did NFPA 855 impact the energy storage industry?

In Maryland and New York, the energy storage industry supported new regulations that enforced the latest NFPA 855 requirements. In California, the industry offered a suite of policy recommendations to address unique safety questions arising from the Moss Landing incident, including enforcing key provisions of NFPA 855.

What is energy storage performance test?

Focuses on the performance test of energy storage systems in the application scenario of PV-Storage-Charging stations with voltage levels of 10kV and below. The test methods and procedures of key performance indexes are defined based on the duty cycle deriving from the operation characteristic of the energy storage systems.

What is ACP's battery storage blueprint for safety?

ACP's Battery Storage Blueprint for Safety outlines key actions and policy recommendations for state and local jurisdictions to regulate battery storage, enforce the country's most rigorous safety standards, and ensure coordination on safety and emergency response in all communities.

viii Executive Summary Codes, standards and regulations (CSR) governing the design, construction, installation, commissioning and operation of the built environment are intended to protect the public health, safety and

NFPA 855, the Standard for the Installation of Stationary Energy Storage Systems, plays a critical role in enhancing the safety of battery energy storage systems ...

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To address this lag between CSR and technology development and deployment, three critical components or gaps were identified at the workshop that must be immediately addressed: 1) the lack of standardized methods and the scientific basis necessary to validate system safety, 2) ...

More-accurate, laboratory-grade products or reference standards are often used to characterize, refine, calibrate, adjust, and monitor devices that are deployed, or are intended to be deployed, in physical spaces of interest. Sensors or reference standards need to be calibrated periodically to ensure that their use yields accurate measurements.

The large capital investment in grid-connected energy storage systems (ESS) motivates standard procedures measuring their ... various types of rechargeable energy storage systems, including electrochemical systems such as BESS, with the ... This report is available at no cost from the National Renewable Energy Laboratory at ...

2: Battery Energy Storage System requirements for contingency FCAS registration v2.0 3: VPP Demonstrations FCAS Specification v1.1 MARKET ANILLARY SERVI ES SPE IFI ATION Section 5.3 table 4, specifies the measurement and accuracy requirements for the different FCAS types. The measured quantities are frequency and active power with the range ...

This document provides an overview of current codes and standards (C+S) applicable to U.S. installations of utility-scale battery energy storage systems. This overview highlights the most impactful documents and is not intended to ...

NFPA 855--the second edition (2023) of the Standard for the Installation of Stationary Energy Storage Systems--provides mandatory requirements for, and explanations ...

(1) Internal short-circuit test method of lithium-ion battery for electrical energy storage: T/CEC 172-2018 [94] T3 (2) Safety requirements and test methods of lithium-ion battery for electrical energy storage: T/GHDQ 3-2017 [95] T5 (3) Performance requirements and test methods of traction batteries for battery electric vehicles in frigid ...

National standards for energy storage encompass regulations, frameworks, and guidelines aimed at enhancing the efficiency, safety, and sustainability of energy storage ...

including: national fire safety standards, guidance established by national energy laboratories, and existing state laws and local regulations. The American Clean Power Association supports the adoption of NFPA 855, the national fire protection safety standard for grid-connected energy storage. This safety standard, developed by

existing standards are not deficient, and/or identify the need for new standards to reflect the potential large

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increase in BESS. Entities that compile battery data information must enhance both their data collection methods as well as their reporting methods. As energy storage systems become more prolific, accurate and timely data will be

demonstrated that the requirements of the national standard can be met. To this end a more extensive list of related standards and codes of practice is provided at Appendix 3. These standards and codes are incorporated in this national code and where ... how to comply with the National Standard for the Storage and Handling of Workplace

The IESA is leading these efforts and has several initiatives aimed at disseminating information to catalyze growth in energy storage, including an India Energy Storage Database and Energy Storage Standards Taskforce, as well ...

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A critical component of the Blueprint is understanding where the industry has been successful in efforts across the country to advocate for enforcement of the National Fire Protection Association's standard for energy ...

Although certain battery storage technologies may be mature and reliable from a technological perspective [27], with further cost reductions expected [32], the economic concern of battery systems is still a major barrier to be overcome before BESS can be fully utilised as a mainstream storage solution in the energy sector. Therefore, the trade-off between using BESS ...

1.1 These requirements cover an energy storage system (ESS) that is intended to receive and store energy in some form so that the ESS can provide electrical energy to loads ...

The American National Standards Institute does not develop Standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute.

This Energy Storage SRM responds to the Energy Storage Strategic Plan periodic update requirement of the Better Energy Storage Technology (BEST) section of the Energy Policy Act of 2020 (42 U.S.C. &#167; 17232(b)(5)).

effectiveness of energy storage technologies and development of new energy storage technologies. 2.8. To develop technical standards for ESS to ensure safety, reliability, and interoperability with the grid. 2.9. To promote equitable access to energy storage by all segments of the population regardless of income, location, or other factors.

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National Institute of Solar Energy; National Institute of Wind Energy; Public Sector Undertakings. Indian Renewable Energy Development Agency Limited (IREDA) Solar Energy Corporation of India Limited (SECI) Association of Renewable Energy Agencies of States (AREAS) Programmes & Divisions. Bio Energy; Energy Storage Systems(ESS) Green Energy ...

through consensus processes approved by the American National Standards Institute. For these model codes to be enforceable, they must be adopted, in whole or in part, by states or local jurisdictions. ... Chapter 52 provides high-level requirements for energy storage, mandating compliance with NFPA 855 for detailed requirements, effectively ...

A 200 MWh battery energy storage system (BESS) in Texas has been made operational by energy storage developer Jupiter Power, and the company anticipates having over 650 MWh operating by The Electric Reliability Council of Texas (ERCOT) summer peak season [141]. Reeves County's Flower Valley II BESS plant with capacity of 100 MW/200 MWh BESS ...

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA ICS 43.080 T 47 GB 38031-2020 Replacing GB/T 31485-2015, GB/T 31467.3-2015 Electric Vehicles Traction Battery Safety requirements ... This Standard is applicable to rechargeable energy storage devices for electric vehicles, such as: li-ion battery and nickel-metal hydride battery. ...

China's natural gas industry has grown rapidly in all aspects of upstream, midstream and downstream, aiming to build a natural gas production, supply, storage and marketing system characterized by domestic supply, diversified import sources, perfect pipeline layout, complete gas storage and peak-regulating facilities, rational gas structure, and safe ...

first safety requirements for energy storage systems that led to the publication of standard UL 9540. In response to concerns from the regulatory community to characterize fire hazards for ... particularly National Standards for systems deployed in the United States, is an acknowledged best practice. ... veracity or accuracy of the information ...

The ESS project that led to the first edition of NFPA 855, the Standard for the Installation of Stationary Energy Storage Systems (released in 2019), originated from a request submitted on behalf of the California Energy ...

Performance standards are critical to building a clean and modern grid--they streamline interconnection of renewable energy resources, they create a united defense ...

requirements for energy storage to provide value to the grid, while maintaining safety and reliability. pg 11 OVERVIEW pg 2 ... formulate accurate, reliable bids and offer a tailored portfolio of ... co-published as a

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collaborative effort of EPRI and national laboratories. Standards Developing Organizations (SDOs) Standards are essential for ...

Three of these standards are related to energy storage. Electrochemical energy storage technical specifications for grid-type converter, guidelines for safety evaluation of ...

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