

# Improving the safety of energy storage batteries





## Overview

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How can a holistic approach improve battery energy storage system safety?

Current battery energy storage system (BESS) safety approaches leads to frequent failures due to safety gaps. A holistic approach aims to comprehensively improve BESS safety design and management shortcomings.

1. Introduction.

Are battery energy storage systems safe?

The integration of battery energy storage systems (BESS) throughout our energy chain poses concerns regarding safety, especially since batteries have high energy density and numerous BESS failure events have occurred.

How can utilities improve battery safety?

Other guidance covers development of utility expertise on battery safety and completion of a comprehensive safety evaluation at each storage system facility. Another important leading practice is for utilities to identify a safety lead at each battery site.

How to reduce the safety risk associated with large battery systems?

To reduce the safety risk associated with large battery systems, it is imperative to consider and test the safety at all levels, from the cell level through module and battery level and all the way to the system level, to ensure that all the safety controls of the system work as expected.

How do you evaluate a battery energy storage system?

Common safety data support a common evaluation process —The optimal approach to assess the safety risks of a battery energy storage system depends on its chemical makeup and container. It also relies on testing each level of integration, from the cell to the entire system.

Is a holistic approach to battery energy storage safety a paradigm shift?



The holistic approach proposed in this study aims to address challenges of BESS safety and form the basis of a paradigm shift in the safety management and design of these systems. Current battery energy storage system (BESS) safety approaches leads to frequent failures due to safety gaps.



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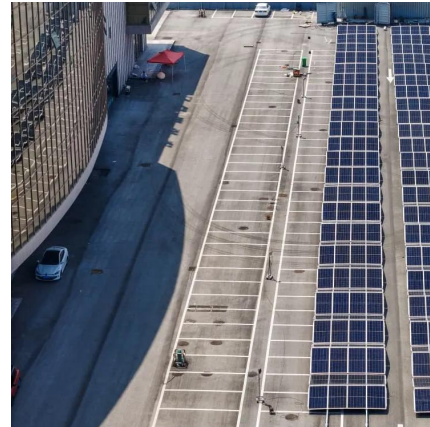
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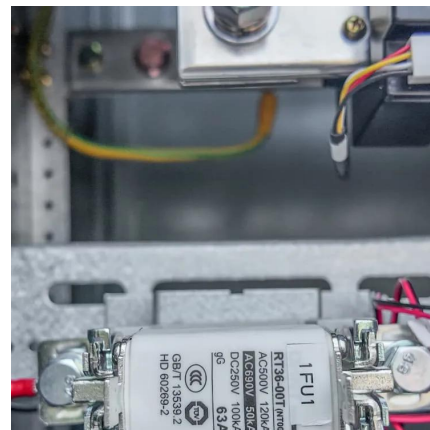


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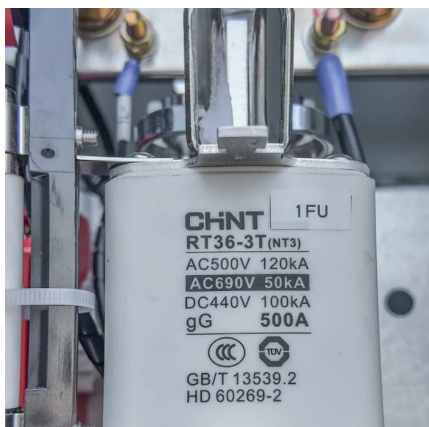
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