

TVA INNOVATION AND RESEARCH

Battery Energy Storage System Safety

Energy storage can help TVA reach its aspirational goal of a decarbonized energy system.

Through the Storage Integration initiative, TVA is exploring existing and emerging technologies that provide energy storage services at a utility-scale. Whether it is through supporting the reliability of existing plants, providing additional system capacity, contributing to grid services or making variable, renewable energy resources more valuable, storage will play a key role.

While there are numerous types of energy storage, TVA is currently focused on deploying more lithium-ion batteries to our system. These batteries are similar to those found in laptops, cellphones and electric vehicles — they are just much bigger with more complex operating systems.

BATTERY ENERGY STORAGE SYSTEM BENEFITS



Supports the
reliability of
existing plants



Provides additional
system capacity



Contributes
to grid services



Makes renewable
energy resources
more valuable

Battery Storage Safety Aspects

Batteries installed in the TVA service region will have robust safety components based on best practices from other utilities. These safety measures include:



Advanced Battery Monitoring System

This system provides TVA operators with 24/7 information on the battery's health and temperature — notifying TVA immediately in the unlikely event of a malfunction. This technology helps TVA operate the battery optimally and avoid overuse, reducing the chances of an issue.



First Responder Training

First responders in locations where batteries will be installed will have training and instructions to ensure they have the right knowledge and tools in the unlikely event of a battery malfunction.



Safe Distances and Barriers

All systems will be installed to meet stringent guidelines which require space or barriers between batteries to prevent battery-to-battery fire transfer and provide room for first responders to address a fire. We also locate batteries a specified distance from communities to ensure safety and reduce exposure to faint, hum-like noise that comes from the battery.



Automatic Fire Protection System

This system uses direct injection with a dry chemical and gas detection inside the battery container to help suppress a fire. Each fire protection system has been tested and meets UL 9540 standards.



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Learn more about TVA's battery energy storage systems and the safety measures we're exploring and implementing at [TVA.com](https://www.tva.com).