ORR® Protection
Mission Critical Fire Protection Experts®

Battery Energy Storage Systems for Clean Energy

Battery Energy Storage Systems (BESS) are critical components in the clean energy market, providing a means to store and manage electricity generated from renewable sources like wind and solar. They help stabilize the grid, ensure a consistent power supply, and enable more efficient use of clean energy by storing excess power during peak production times and releasing it during periods of high demand or low production.

Why choose ORR Protection for BESS in Clean Energy?

One Call, One Contact, One Solution

Advanced Detection	Fire Alarm	Suppression
Commissioning	ITM	Explosion Prevention
Off-Gas Monitoring	Hazard Mitigation Analysis	Emergency Power Off System

Top 5 Fire Protection Risks in Clean Energy BESS

Thermal Runaway: Batteries, especially lithium-ion types, can experience thermal runaway—a chain reaction causing rapid overheating and potentially leading to fires or explosions. Effective thermal management and fire suppression systems are essential to mitigate this risk.

Detection and Suppression: Early detection of fires in battery storage systems is challenging due to the often sealed and confined nature of these systems. Developing reliable fire detection and suppression technologies that can function effectively in such environments is crucial as traditional fire suppression systems today are not proven to put out a lithium-ion battery fire.

Chemical Hazards: The materials in batteries, such as lithium, can pose significant chemical hazards when exposed to fire. These chemicals can be highly toxic or reactive, requiring specialized containment and handling procedures during a fire.

System Integration: Integrating fire protection systems with the overall design of battery storage facilities can be complex. Ensuring that fire suppression systems do not interfere with the operation of the storage system while still providing adequate protection is a key challenge.

Maintenance and Inspection: Regular maintenance and inspection of fire protection systems and the batteries themselves are essential for safety. Ensuring that these systems are properly maintained and updated in response to evolving standards and technologies can be a logistical and financial challenge.

ORR Protection | 2100 Nelson Miller Parkway | Louisville, KY 40223-2186 USA
Toll Free 800.347.9677 | NATIONAL ACCOUNTS 800.949.0011

Clean Energy BESS

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SERVICE: Local-Regional-National

A comprehensive service agreement with ORR Protection offers you a path to standardize fire system inspection, testing, and maintenance operations throughout all of your facilities. Whether it is local, regional, or national, ORR's "Service System" approach provides your company with:

Manufacturer Experience Where and When It Counts

- The average ORR Field Technician has over eight years of field experience
- ORR partners with most major manufacturers
- Manufacturer-trained, licensed, and certified
- Technician training program is part of a quality management system registered to ISO 9001:2015

Service Effectiveness

- Strategically nationally located field technicians for emergency response
- On-line reporting
- Fully stocked service vans
- Technicians have instant access to past inspection and maintenance history
- Avoid future problems and unplanned expenses
- OPEX and CAPEX budgeting
- OSHA trained

Flexible Options to Design What You Need

- Sprinkler systems
- Sprinkler deluge
- Water mist protection
- Clean agent systems
- Fire and gas detection
- Inerting systems
- Aerosol systems
- Electrolyte vapor detection
- Explosive gas detection
- Fire detection and alarms
- End of Life Study

NEW INSTALLATIONS: Nationwide

Our knowledgeable project teams and designers are ready for your battery venture. We have experience with a variety of BESS projects including:

- Micro Grid Installation
- Utility-scale BESS installations
- Data center battery / UPS rooms
- Battery manufacturing plants
- End-of-life recycling facilities
- Wind
- Hydro Electric / Solar PV

We can help guide you towards code compliance and the necessary engineering reports for a safe battery installation.

- Hazard mitigation analysis reports (HMA)
- Gas modeling for explosion prevention systems
- Plume Study
- Site emergency response plans (ERP)

Energy Storage and Power Generation

Since 1971, ORR has focused on special hazards fire protection for mission-critical equipment and processes. To accomplish this, ORR has aligned itself with the industry's premier manufacturers of fire detection, alarm, and suppression systems.

Fire Alarm

- Conventional Systems
- Intelligent Addressable Systems
- Emergency Voice Evacuation
- Mass Notification
- Networked & Integrated Systems
- Sprinkler Monitoring Systems
- Central Station Monitoring
- BDA Communications

Explosion Suppression

- Prevention Systems
- Gas Detector Controllers
- Exhaust Systems
- Blast Relief Panels

Suppression

- High & Low Pressure CO_2
- Water Mist Systems
- Hybrid Systems
- FM200 / HFC-227 / FE-227
- ECARO-25 / FE-25
- 3M NOVEC 1230 / FK-5-1-12
- Inert Gases: Inergen / Argonite / Nitrogen
- In-Cabinet Suppression
- Foam
- Dry Chemical
- Aerosol
- Sprinkler
- Water Storage

Detection

- Air Sampling Smoke Detection
- Spot Smoke Detection
- Linear Heat Detection
- Gas Detection
- Flame Detection
- Beam Detection
- Video Smoke & Flame Detection
- Battery Off-Gas Detection

Monitoring

- 2-Ring Commitment
- 24/7 Site Monitoring
- Mobile App
- Redundant Locations
- Customer Service
- Geo-Diverse Locations
- UL & FM Approved
- After-Hours Tech Support

Learn more about
BESS

ORR® Protection
Mission Critical Fire Protection Experts®

ORR's Premier Energy Partners

DET-TRONICS
Fike®
INFRASENSING
Marioff
VID FIREKILL LOW PRESSURE WATERMIST
IEP TECHNOLOGIES HOERBIGER Safety Solutions
LI-ION TAMER®
FIRETRACE™ International
NOTIFIER®
PROTECTOWIRE® FireSystems
Kidde Fire Systems
RKI INSTRUMENTS
SIEMENS
Honeywell
SPECTREX INC.
Stat-X® Aerosol Fire Suppression
VESDA® by xtralis

Professional Memberships

FSSA FIRE SUPPRESSION SYSTEMS ASSOCIATION

FSSA
Fire Suppression Systems Association

SFPE Engineering A Fire Safe World

SFPE
Society of Fire Protection Engineers

NFPA® MEMBER

NFPA
National Fire Protection Association

ICC INTERNATIONAL CODE COUNCIL®

ICC
Distributed Energy Resources

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