



INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

NEWS RELEASE

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Contact: Tim Burn
202-230-7167; tburn@iaff.org

Emerging Fire Hazard: Residential Energy Storage Systems

New report identifies challenges responding to fires involving residential battery storage systems.

Fire fighters are being urged to take extra precautions when approaching structure fires involving residential energy storage systems (ESS), an increasingly popular home energy source that uses lithium-ion battery technology.

The findings are part of an exhaustive report released by the International Association of Fire Fighters (IAFF) and UL Solutions, based on a two-year research project examining the characteristics of fires resulting from the overheating of lithium battery systems stored in residential structures. The report -- "*Considerations for Fire Service Response to Residential Battery Energy Storage System Incidents*" -- offers new data on how lithium fires ignite and spread and urges support for further research toward limiting these fires.

"Professional fire fighters are trained to respond swiftly to all hazards, and lithium battery fires represent one more challenge we must confront," said IAFF General President Edward Kelly. "On behalf of the IAFF, I encourage fire officials to study this report, and urge governments to support this ongoing research."

Lithium batteries are found in consumer products including smart phones, scooters, e-bikes, as well as new residential energy systems. While powerful and useful, these batteries can swiftly overheat and ignite. In 2019, four Arizona fire fighters were seriously injured responding to a fire where trapped gases from an ESS exploded.

The IAFF and UL Solutions, funded through a Department of Energy grant, began researching residential ESS fire incidents to provide fire fighters data and tactical considerations for effective response.

"When lithium-batteries fail, fire fighters must respond and successfully control the situation to protect public safety, stated Sean DeCrane, Director Health and Safety Operational Services at the IAFF. This research project is the first project to evaluate the result of failure in a residential lithium-ion battery energy storage system, and to develop tactical considerations for the fire service to these incidents.

“A heightened focus on sustainable building construction and renewable energy also means considering new approaches to fire safety,” said Alex (Klieger) Schraiber, P.E., Research Manager, Fire Research & Development at UL Solutions. “We are proud to partner with IAFF to apply our decades of large-scale fire testing and energy storage system testing experience to further the understanding of fire service approaches necessary in addressing residential energy storage system hazards.”

The IAFF, and our partners at UL Solutions and the Fire Safety Research Institute (FSRI), continue to work on this project to develop training materials. This educational outreach is critical to getting the information to fire fighters.

About the International Association of Firefighters

The International Association of Fire Fighters (IAFF) is the driving force behind every advance in the fire and emergency services in the 21st century. With headquarters in Washington, D.C., and Ottawa, Ontario, the IAFF represents more than 342,000 full-time professional fire fighters and paramedics in more than 3,500 affiliates. IAFF members protect more than 85 percent of the population in communities throughout the United States and Canada.

About UL Solutions

A global leader in applied safety science, UL Solutions transforms safety, security, and sustainability challenges into opportunities for customers in more than 100 countries. UL Solutions delivers testing, inspection, and certification services, together with software products and advisory offerings, which support our customers' product innovation and business growth. The UL Certification Marks serve as a recognized symbol of trust in our customers' products and reflect an unwavering commitment to advancing our safety mission. We help our customers innovate, launch new products and services, navigate global markets, and complex supply chains, and grow sustainably and responsibly into the future. Our science is your advantage.

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