



2024  
INTERNATIONAL CODE COUNCIL  
**CONFERENCE**  
EXPO+HEARINGS

# The Battery Revolution: Safety Considerations for the Built Environment

Insight Session 5 - Quick Hits on Emerging Building Safety Topics



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International Code Council

# AGENDA

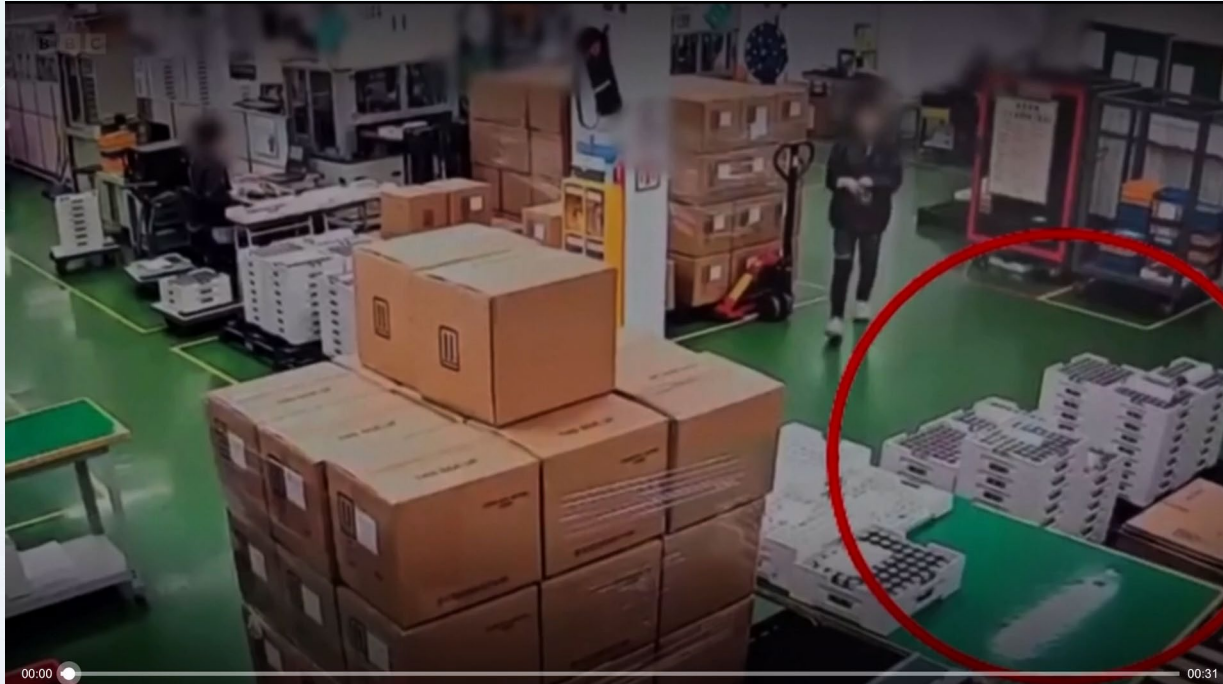
- Recent Battery Incidents
  - Manufacturing Sector
  - Commercial Battery Energy Storage Systems (BESS)
  - Electric Vehicles
  - Micromobility/E-Scooter
  - Waste Management/Recycling Sector
- International Code Council
  - Strategic Fire Service Partnerships
  - Battery/Energy Storage Tools and Resources in the I-Codes
  - Ways to Participate
- Questions and Answers

# Recent Incidents - Manufacturing Sector

## Aricell Battery Factory Fire - South Korea



# Recent Incidents - Manufacturing Sector



# Recent Incidents - Commercial BESS

Otay Mesa Battery Fire - San Diego, CA



# Recent Incidents - Commercial BESS



# Recent Incidents - EV Battery Fire

Tesla EV Battery Fire - Sacramento, CA





# Recent Incidents - EV Battery Fire



# Recent Incidents - Micromobility/E-Scooter

## Li-ion Battery Fire - New York City



# Recent Incidents - Micromobility/E-Scooter



# Recent Incidents - Waste Management/Recycle

## Waste Management Plant Fire - Australia



# Recent Incidents - Waste Management/Recycle



# ICC Strategic Fire Service Partnerships

- United States Fire Administration (USFA)



- USFA supports and strengthens fire and emergency medical services (EMS) and stakeholders to prepare for, prevent, mitigate and respond to all hazards.

- Congressional Fire Services Institute (CFSI)

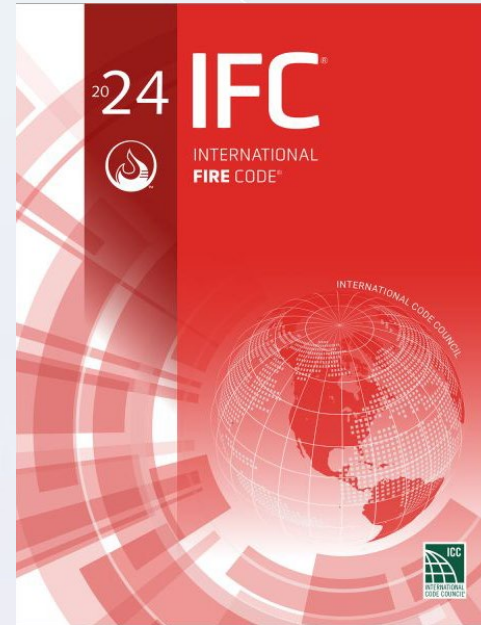


- Educate members of Congress about Fire & Life Safety Issues
- National Advisory Council of more than 35 national fire service organizations



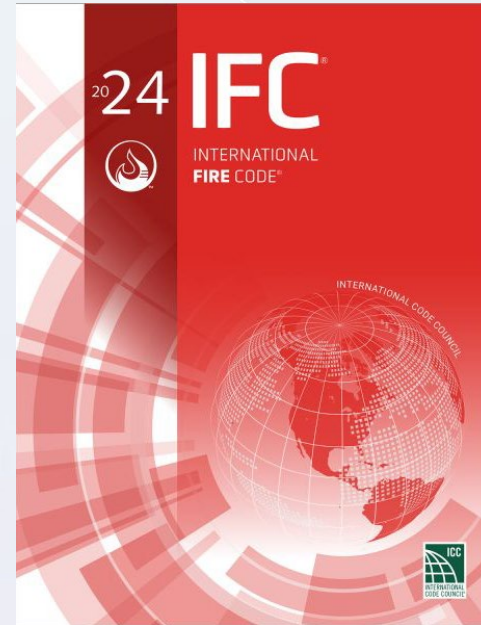
# Battery/Energy Storage Tools and Resources in the I-Codes

- Section 320 - Lithium-Ion and Lithium Metal Battery Storage
  - Permits, fire safety plan, indoor and outdoor storage requirements
  - Technical opinion and report
  - Construction requirements including fire protection systems, fire alarm systems, explosion control, reduced requirements for partially charged batteries, fire detection for outdoor storage areas



# Battery/Energy Storage Tools and Resources in the I-Codes

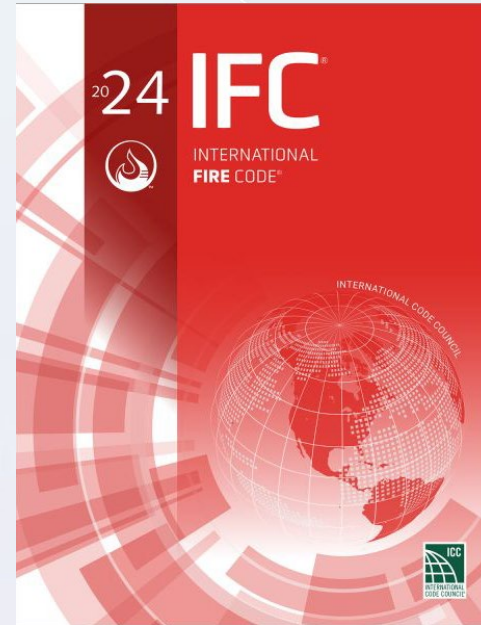
- Chapter 9 - Fire Protection and Life Safety Systems
  - Adds automatic sprinkler requirements for F-1, M, S-1 occupancies that meet certain storage criteria for lithium-ion or lithium metal batteries
  - Adds fire protection system requirements for stored lithium-ion or lithium metal batteries based on fire tests from approved laboratories
  - Adds fire alarm system requirement for Group S occupancies





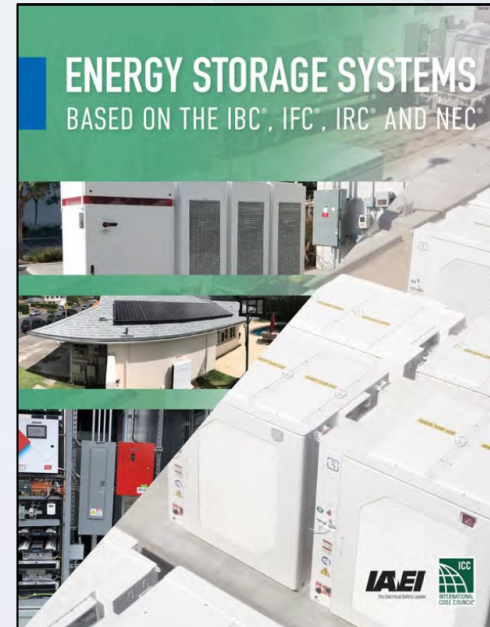
# Battery/Energy Storage Tools and Resources in the I-Codes

- Section 1207 - Electrical Energy Storage Systems (ESS)
  - Requirements based on energy capacity
  - Permit requirements including construction documents and hazard mitigation analysis
  - Large scale fire testing requirement as required by UL 9540A
  - Commissioning, decommissioning, operation and maintenance requirements
  - Listing requirements and electrochemical ESS protection requirements



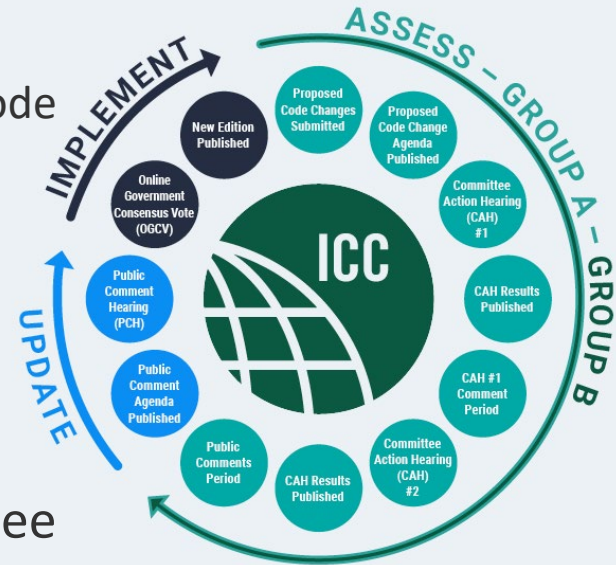
# Battery/Energy Storage Tools and Resources in the I-Codes

- ICC and International Association of Electrical Inspectors (IAEI)
  - Collaborative discussion of Energy Storage Systems (ESS) based on commonly applicable codes
  - International Building Code
  - International Fire Code
  - International Residential Code
  - National Electrical Code



# Ways to Participate

- ICC Code Development Process
  - Submit code change proposal, apply to serve on a code committee, participate in CAH, PCH, OGCV
- ICC Fire Code Action Committee (FCAC)
  - Fire code development - IFC, IBC, IWUIC, ICCPC
- ICC Fire Service Membership Council (FSMC)
  - Fire-specific domain forum, open to public
- ICC Battery and Energy Storage Ad Hoc Committee
  - Exploring how building safety is impacted by the manufacturing, storage, use and recycling of batteries and energy storage systems





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# Thank you for Attending

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