



# 2021 ICC Code Hearing Briefing



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ICC Certified Building Official and Commercial Energy Inspector

Arizona State Certified - Fire Inspector I

Past Member Arizona State Fire Safety Code Committee

SRP’s voting representative to the NFPA and

ICC code development process

# Today's Briefing is about YOU

- Learn how to sign into ICC's cdpAccess, what proposals relate to EVs and ESS
- Everyone will be muted – please type your questions in the chat.
- Feel free to photograph the slides with the code proposal listings.
- The slide deck and recording should be posted tomorrow to NAATBatt site...
- Feel free to email questions to me later at [Sharon.Bonesteel@SRPnet.com](mailto:Sharon.Bonesteel@SRPnet.com)
- Send me cool pictures of battery installations that you encounter!
- SRP always starts meetings with a safety minute, so let's get started!





Safety Minute: Spare Lithium-Ion Batteries around the house? Get them to a Recycle Facility!



# ICC Code Action Hearings:

**CAH Hearing Links.** As a reminder the Code Action Hearings (CAH) are coming up soon.  
**Testifying is going to be virtual but you need to register!**  
(no obligation to testify simply allows you too and very easy to do)

Here are a couple links/attachments of interest.

**Registration.** <https://www.iccsafe.org/about/news-and-events/2021-cah/>

**Schedule.** <https://www.iccsafe.org/wp-content/uploads/2021-Group-A-CAH-hearing-schedule.pdf>

**Code changes.** <https://www.iccsafe.org/products-and-services/i-codes/code-development-process/2021-2022-group-a/>

**CAH page.** <https://www.iccsafe.org/products-and-services/i-codes/code-development/2021-2022-virtual-committee-action-hearing/>



# Proposals Related to EVs:

E124-21 – IBC – 1107.2

E125-21 – IBC – 1107.2

E126-21 - IBC – 1107.2.4

F-13-21 – IFC – 314

F-24-21 – IFC 202,322

F-25-21 – IFC 202, 322

G66-21 - IBC 202, 406.2.7

G32-21 – IBC – 306.2 – Occupancy Groups



# Proposals related to ESS:

E26-21 Part I – IBC – 202, 1008.3.4, 1013.6.3

E26-21 Part II - IFC – 1203.1.1, 1203.1.3

F-2-21 – IFC – 202

F3-21 – IFC – 202 etc – Flam.Gases

F21-21 – IFC – 105.6.25, 321

F24-21 – IFC – 202, 322

F25-21 – IFC – 202, 322

F28-21 – IFC – 403.10.6

F29-21 – IFC – 407.1

F62-21 – IBC – 903.2

F66-21 –

F71-21 – IFC – 903.3.1.1.3

F88-21 – IFC/IBC – Ch.9 – AFS reqmt's

F121-21 – IFC – 1107

F122-21 – IFC – 1201.1

F123-21 – IFC – 1201.1

F124-21 – IFC – 1201.1

F125-21 – IFC – 1201.1

F132-21 – IFC – 1207.1

F133-21 – IFC – 1207.1

F134-21 – IFC – 1207.1

F140-21 – IFC – 1207.3

F146-21 – IFC

F152-21 – IFC

F153-21 – IFC –Resid.

G32-21 – IBC – 306.2

G36-21 –



# Codes and Standards

There are many codes and standards (C&S) that guide the designer in creating an Energy Storage installation, including: the International Fire Code, the NFPA National Electric Code, the National Electric Safety Code C2, and the NFPA 855 Standard for the Installation of Stationary Energy Storage Systems. Residential Energy Storage is referenced in the IRC.

## NFPA 855-2020 – First Edition of the Standard for the Installation of Stationary Energy Storage Systems

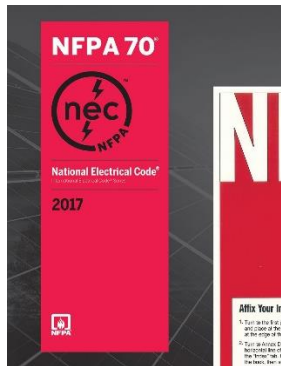
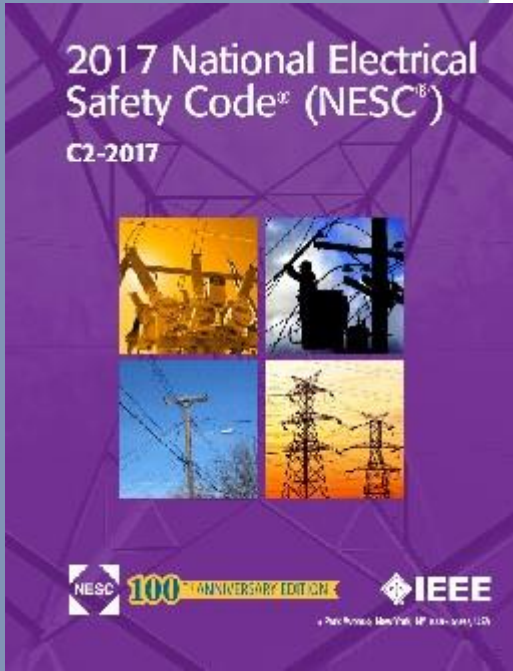
The 2021 iCodes -most current safety info

2018 iCodes: Much better than the 2012, or 2015 -still lacking

IRC – Section 327 – Stationary Storage Battery Systems

IBC – Ch.13 Energy Efficiency refers you to the IECC; no ES

IFC - Ch 12 – Energy System

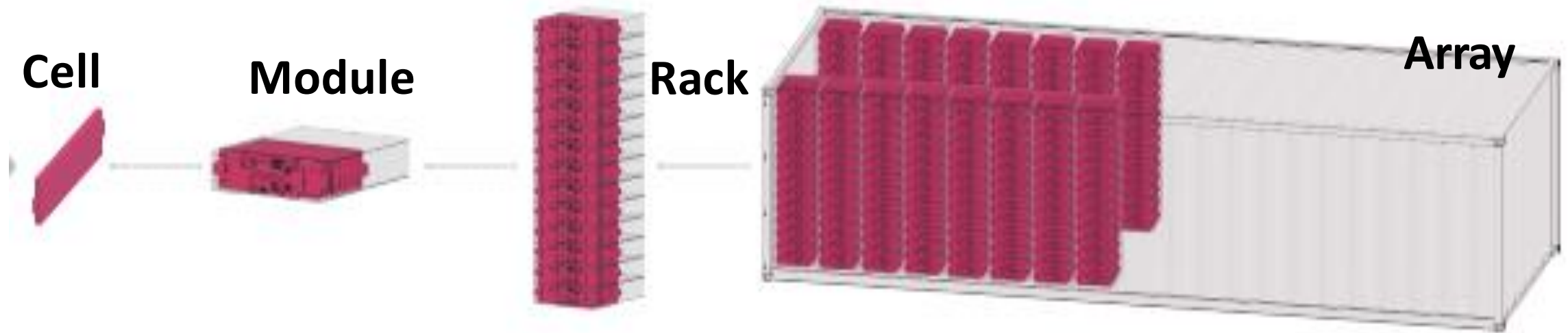




# UL9540 Certified, UL9540a Testing

The test is not a pass/fail test. It just gives information to the designer on what level of fire protection or suppression is needed to create a safe condition. This info goes into the listing.

Test starts at cell level; does it go into thermal runaway? No then stop  
Yes? Then test at the module level. No thermal runaway? Then stop  
Yes? Then test at the rack level. No thermal runaway? Then stop  
Yes? Then test at the array level.



# Amendments and NFPA 855 for Residential

## NFPA 855-20 Chapter 15 One- and Two-Family Dwellings and Townhouse Units

**ESS 1 kWh or greater max. stored energy  
Shall be listed and labeled in accordance  
With UL9540**

**Units max 20 kW ea, aggregated rating  
amounts vary from 40 to 80 kWh  
depending upon location. >80 kWh follow  
Ch. 4-9, with PIP and ERP etc.**

**Fire detection via smoke or heat alarms  
Protection from Impact  
Exhaust ventilation or if toxic gases during  
charging or discharge then only outdoors**

**Location: ESS shall only be installed in the following locations:**

1. In attached garages separated from the dwelling unit living area and sleeping units in accordance with the local building code.
2. In detached garages and detached accessory structures.
3. Outdoors on exterior walls or on the ground located a min of 3 ft from doors and windows.
4. In enclosed utility closets and storage or utility spaces.

**Commissioning required:** installed in compliance with the mfg's instructions, operating properly, operating and maintenance info on site, training to owner, labeled with qualified maintenance provider.

**Check out Phoenix Fire's amendments to 2018 IFC for guidance:**

<https://codes.iccsafe.org/content/PHXFC2018P1>

# Key Words:

**Commissioning:** the process of planning, documenting, scheduling, testing, adjusting, verifying, and training, to provide a facility that operates as a fully functional system per the Owner's Project Requirements.

**UL 9540 - [UL9540 ESS Requirements by Laurie Florence and Howard Hopper](#)**

**UL 1741 – Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.**

Product safety standard that lays out the manufacturing (including software) and product testing requirements for inverters.







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Thank you!