DFS Battery Symposium

10-13-2023

SFPE New England

AFAA New England

AGC MA Building Excellence

Woburn Electrical School of Code & Theory

CONSTRUCTION FIRE SAFETY COALITION

NFSA
NATIONAL FIRE SPRINKLER ASSOCIATION
The Voice of the Fire Sprinkler Industry

MA Board of Elevator Regulations

ASME A.17 Emergency Operations

- Opinions, perspectives and comments
- Cannot cover everything
- More questions then answers
- Nothing intended to be contentious
- Not sure what is considered large
- By no means is an operational directive


GAS


NO SMOKING
Tesco
DANGER
4
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Addressing the Challenges of BESS

- Low Frequency High Profile Events
- Recent news with several in NY State and Idaho
  - Surprise Arizona lessons learned (UL FSRI report)
- No doubt these events can be dramatic and hurtful
- First thought that the FD only needs water and access
- Now know FD needs early detection and explosion venting control
- NFPA 855 Annex C
  - IAFF

Addressing the Challenges of BESS

- Its just electrical energy on fire (water can be used effectively on Class C, first need to change mindset and practice to get comfortable)
- In perspective its not any more of a *hazardous material* than a room and contents fire (however takeaways: methodical, slow down, self burn out)
- Terminology Lithium vs Lithium-Ion
- Difficulty in getting water where it is needed
- Necessity to resist in opening things up
- Acceptance of defeat by letting it consume itself

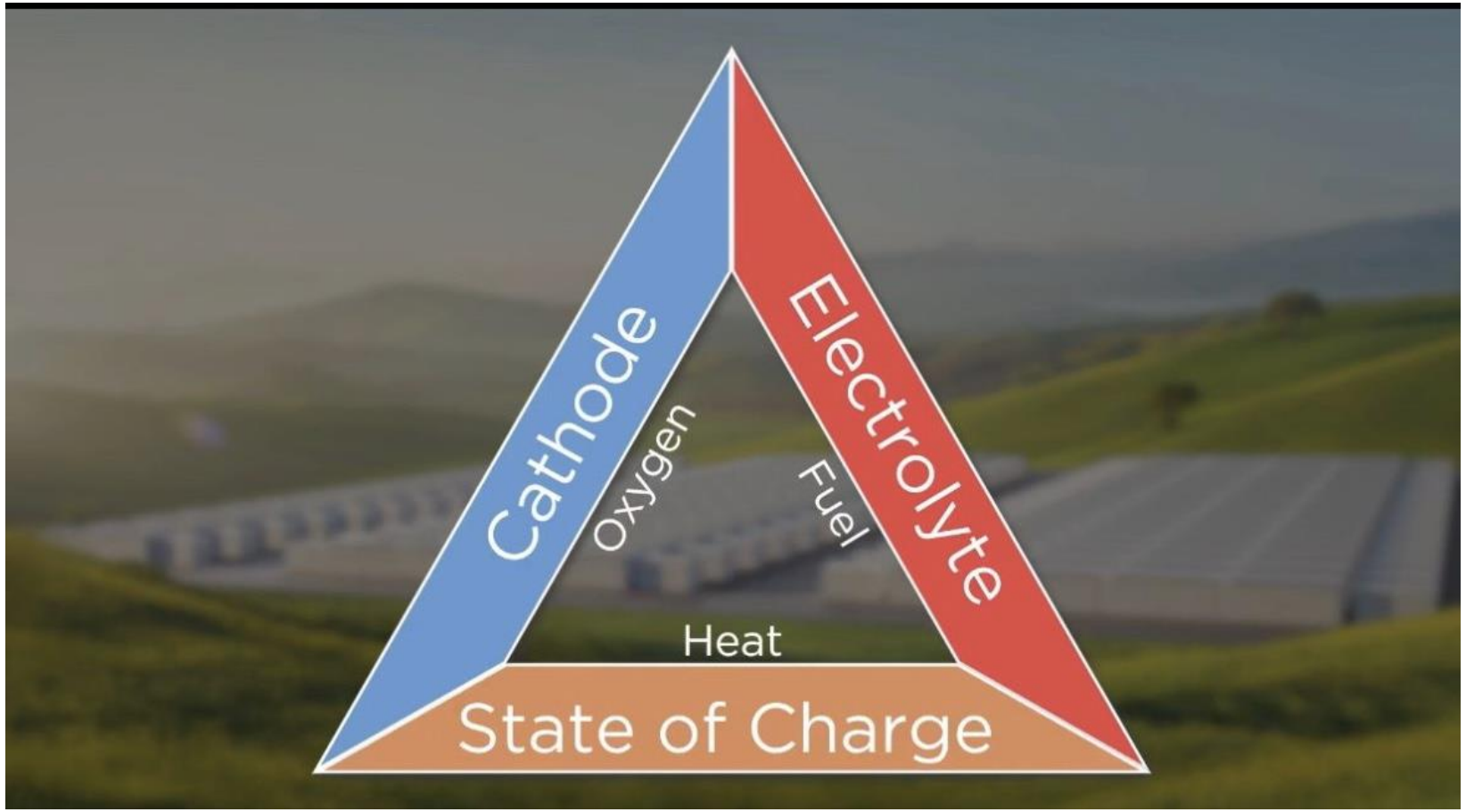
Addressing the Challenges of BESS

- ESS is supposed to be designed to consume itself in a fire condition
- Some events have had successful failures (Moss Landing)
- Built in fluid injection thermal management systems (ASTM B3-1 & B3-3)
- Water mist (NFPA 15) and water spray (NFPA 750) are showing most promise for on board suppression
- ERP/EAP/On-site personnel
- Protect exposures
- Monitor air quality

Addressing the Challenges of BESS

- All shapes and sizes
- Water supply (water can be a double-edged sword)
- Runoff
- Consider alternatives (dry fdc and deluge, water mist, explosion panels)
- Patience
- Be cautious of products claiming to be better mouse traps (F-500, nozzles, blankets)
- Learn learn learn and train train train (YouTube and LinkedIn)

Break the Triangle



Addressing the Challenges of BESS

- All fires go out
- Know your enemy
  - All batteries have four basic components (Anode, Cathode, Separator and Electrolyte)
  - Battery Management Systems, Inverters, Charge Controllers
- Electric shock is least of worries
- Explosion is reality
- Identify power sources and disconnecting means
- Post event handling
- Design in your needs from the beginning


WHY?
HOW
WHAT?
WHO?
WHEN?
WHERE?