MD Commission Update

Utility Applications Preliminary Findings

- Finding there have been safety risks regarding the use of energy storage device installations containing Li-ion batteries for utility scale storage.
  - Moss Landing Event
  - Surprise Arizona (FRSI Study that necessitated NFPA 850)
    - Multiple first-responders seriously injured due to deflagration event, lack of gas monitoring, and no venting for the system

- Recommend:
  - The Commission recommends that the General Assembly pass legislation to mandate enhanced coordination between utilities and emergency management services, and increased participation from utilities in firefighter and first responder training as it relates to emergency response to utility-scale lithium-ion battery systems.

Recommendations for Suppression & Deterrence of LI-Ion Incidents at Recycling Facilities

- Findings:
  - There has been an increase in li-ion battery fires at municipal solid waste and recycling facilities (curbside and residential) due to batteries and battery embedded products being improperly disposed of. These pose significant risks of fire, safety, and property damage.
  - New and emerging technologies need to be supported relating to delivery of recycled materials and sorting at MRFs
  - Public is largely unaware of what to do with li-ion batteries at EOL

- Recommendation
  - Commission should recommend state legislation requiring education, mitigation, and enforcement of no li-on battery drop off into curbside or commercial containers
  - Recommend resources for public education campaigns to promote responsible battery disposal and recovery initiatives
  - Support adoption of x-ray detection technology to identify batteries improperly in solid waste and recycling streams
  - Promote battery safety containment equipment for those exposed to fire risks of improperly disposed of batteries
  - Work to set minimum standards for ppe, tools, equipment for working safely with li-ion
  - Fundng for MFRI to create courses for first responders to understand li-ion battery fire risks and to help obtain necessary equipment (ensuring consistent messaging statewide
  - Identify easily identifiable collection sites across state

Consumer and Transportation Applications

- Findings
  - Safe use and storage of li-ion batteries should be promoted to the public to prevent fire risks
  - Public education is crucial to promoting safe battery use and recycling
- Recommendations:
  - Adoption of most recent editions of IBC, IFC, and NFPA 1
  - Guidance on batteries being used with charger supplied by the OEM, damaged batteries must be disposed of properly and recycled,
  - Batteries should be charged and stored in a location separate from living areas with outside ventilation, in a climate-controlled environment (garages typically a good place)
  - Avoid overcharge, remove swollen and damaged units from service, employees understand the hazards working with li-ion batteries
  - Funding for the state to conduct public education campaigns to assist local jurisdictions with their own campaigns. Education should include guidance on safe use, storage, transport, and disposal, and targeted outreach to workers, consumers, businesses, schools, and residences
  - Mandatory labeling and hazard placards for battery storage facilities
  - Statewide grants to establish fireproof DDR storage infrastructure that is NFPA compliant

Consumer and Transportation Applications

- Findings:
  - Li-ions present unique transportation risks and there is federal regulations and enforcement from DOT, IATA, IMDG. Enforcement and emergency support at the state level remain limited. DDR units in transit pose significant hazards – especially when in congested transport corridors.
  - Li-ion battery fires present unique hazard for first responders and require new tactics and equipment
  - Disposal of damaged batteries after fire events or vehicle collisions require specialized equipment, trainining, and resources for responding agencies
  - Lack of information on li-ion battery fire data
- Recommendations
  - Require certified packaging and hazard placards
  - Special handling permits for DDR batteries
  - Quantity limits and routing controls for congested corridors
  - Funding for MFRI to develop comprehensive response classes for first repsonders as well as local jurisdictions to acquire necessary equipment and training to mitigate fires and their risks. Training should be available to EMS, Fire, Rescue personnel
  - Assigning single POC state agency for retrieval and disposal of batteries
  - Establish battery disposal cost recovery fund for responders
  - Incentives for recycling facilities to modernize to reduce fire risk

Viability of EPR

- Findings:
  - EPR programs typically segmented by battery size and weight (small format, medium, large)
  - CA, CT, CO, IL, NE, VT, WA DC, WA have li-ion battery collection EPR bills for small/mid-format
    - These bills utilize a producer financed battery stewardship organization
  - NJ only state for vehicle EPR bill however, nine other states have introduced legislation for vehicle batteries
    - EV battery bills differ where a BSO is not required. Producers can manage EPR programs on their own
  - Vehicle batteries:
    - Promote highest and best use of EOFL batteries and utilize existing EOL vehicle infrastructure
    - Battery transparency to promote safety, storage, waste classification, and highest and best use
    - Stranded battery management and takeback at the election of the vehicle owner or owner of the battery
    - Access and training