

Fires involving Lithium-ion battery energy storage systems (BESS) present unique risks and challenges for firefighters due to the nature of the batteries and the potential for thermal runaway. Here's a detailed look at the risks and response strategies:

****Risks:****

1. ****Thermal Runaway****: Lithium-ion batteries are susceptible to thermal runaway, a self-sustaining reaction that can result in rapid heating, fire, and potentially explosion of the batteries.
2. ****Toxic Gas Emission****: When exposed to fire, lithium-ion batteries can release toxic gases such as hydrogen fluoride and phosphine, which pose health risks to firefighters and nearby residents.
3. ****High Energy Density****: Lithium-ion batteries have a high energy density, meaning they can release a significant amount of energy when ignited, leading to intense fires that are challenging to extinguish.
4. ****Reignition****: Even after initial extinguishment, lithium-ion battery fires may reignite due to residual heat or damaged cells.
5. ****Limited Extinguishing Agents****: Traditional firefighting methods may not be effective for extinguishing lithium-ion battery fires, as water can exacerbate the situation by causing thermal runaway.

****Response Strategies:****

1. ****Scene Assessment****: Conduct a thorough assessment of the fire scene to identify the presence of lithium-ion batteries and assess the extent of the fire.
2. ****Isolation and Evacuation****: Establish a safety perimeter and evacuate nearby residents or workers to minimize the risk of exposure to toxic gases and potential explosions.
3. ****Specialized Equipment****: Use specialized equipment such as thermal imaging cameras and gas detectors to monitor temperatures and detect the presence of hazardous gases.

4. **Cooling and Containment**: Apply cooling agents such as specialized foam or dry chemicals to cool the batteries and prevent thermal runaway. Avoid using water unless specifically trained and equipped to do so safely.
5. **Ventilation**: Ensure proper ventilation to dissipate heat and remove toxic gases from the area to reduce the risk of exposure to firefighters and nearby residents.
6. **Coordination with Utility Companies**: Coordinate with utility companies to safely isolate the power source and shut down the energy storage system to prevent further escalation of the incident.
7. **Risk-Based Approach**: Adopt a risk-based approach to firefighting, considering the potential hazards associated with lithium-ion batteries and prioritizing firefighter safety while mitigating the risk to surrounding communities.
8. **Training and Preparedness**: Provide firefighters with specialized training on how to safely respond to lithium-ion battery fires, including protocols for handling thermal runaway and mitigating the release of toxic gases.
9. **Post-Incident Analysis**: Conduct a thorough post-incident analysis to identify lessons learned and areas for improvement in firefighting strategies and tactics for lithium-ion battery fires.

By understanding the unique risks associated with lithium-ion battery energy storage systems and implementing appropriate response strategies, training and equipment, firefighters can effectively mitigate the hazards posed by these incidents while ensuring the safety of personnel and the surrounding community, but only when all the pieces are in place can this be achieved.

We (The Town of Dryden Fire Departments } respectfully request that the Dryden town board put a hold on this project until all the pieces and funding are in place before approving this project.