NERIS Navigator:
Battery Hazards

Purpose

Batteries power everything from phones, tools, bikes, vehicles and energy storage systems (ESS). When a damaged, defective, overheated, or improperly charged cell enters thermal runaway, it can release flammable/toxic gases, produce fast growing fires, and/or create an explosion hazard. **Use the Emerging Hazards module and Incident Analysis to describe how a battery or electrified system was involved, including operational impacts.**

You should document battery-related incidents, when the battery is directly involved in the ignition (source) of the fire, and when it demonstratively contributes to spread (target).

Examples

Incident Scenario	NERIS Documentation	Notes
Consumer-Product Battery Fire A power-tool battery goes into thermal runaway and ignites nearby combustibles while charging.	Incident Type: Fire |Structure Fire | Room and Contents Emerging Hazards: Electric Hazard > Consumer Product | Appliance/Tool Source or Target: Source	Pending fire progression, this could also be a structural involvement fire. If the fire started elsewhere and spread to the battery, then for Source or Target, select Target.
E-Mobility Device Fire An e-bike battery ignites in an apartment hallway while charging overnight.	Incident Type: Fire | Structure Fire | Room and Contents Emerging Hazards: Electric Hazard > E-Mobility | Electric Scooter/Moped Source or Target: Source	If the vehicle was involved in a crash, the incident types become Medical|Injury|Micro Mobility Vehicle Collision **and** Fire |Transportation Fire | Powered Mobility Device Fire
Energy Storage System A residential energy storage system installed in a garage fails and enters thermal runaway.	Incident Type: Fire |Special Fire | ESS Fire Fire Module: For location detail select structure. Emerging Hazards: Energy Storage System > Battery Source or Target: Source	An ESS captures and stores electrical or thermal energy and dispatches the energy as electricity or heat when needed. These include both commercial and residential energy storage systems and can range in size and scale.

Incident Analysis

The Incident Analysis schema is an optional, complimentary schema that relates back to an incident record. These questions are often answered after the initial incident response is complete to document more specific data on the incident. Highlighted below are areas designed to help better quantify these hazards:

Consumer Products Module: product category, manufacturer and model information, and contribution to fire progression.

Batteries Module: type of battery-powered product involved, the type of battery cells involved, the voltage, watt-hour size, amp-hour size, if it was being used or stored during the incident, if it displayed signs of thermal runaway, and the types of suppression or mitigation efforts used for suppression.

Vehicles Module: manufacturer and model, powertrain, VIN, and damage extent.