

Lithium-Ion Risk Management

Post Incident



- Dalan Zartman
- CEO – Energy Security Agency
- dalan@energysecurityagency.com
- 614.314.4096



WHO WE ARE

- Foundationally rooted in battery-based destructive testing and research
- Highly experienced and qualified team members with Lithium-ion specialization
- Industry leaders in battery safety, compliance, and risk mitigation
- Field-tested processes and protocols
- Deep integration with local emergency response and battery resource networks



WHAT WE DO

Comprehensive Lithium-Ion Risk Management

- **Testing:** Collaborative fixed and mobile destructive battery testing for research and safety standards
- **Education:** xEV and Li-Ion Battery virtual and hands-on courses with educational partners
- **Compliance:** Stakeholders and contributors in industry standards and interpretation
- **Incident Management:** 24/7 resource center for real time risk assessment, response, and decommissioning.



ESA provides start-to-finish support — from proactive planning to post-incident response.



Incident Environments and Types

Roadway

BESS Transport
Battery Transport
EV

Fleets

Parking Garages
OEM's
Service Centers
Depots

F1

BESS
Manufacturing
Recycling
Repurposing
Storage

BESS

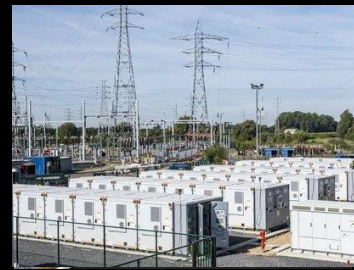
Enclosure
PV

Airports

Consumer
GSE
EV
BESS

Maritime

Consumer
BESS
EV



These environments are complex ecosystems with numerous lithium-ion touchpoints — each requiring a proactive safety planning.



PRE INCIDENT

- SME SUPPORT



Site Assessment



Risk Matrix



Solutions



Selection



Implementation



ACTIVE INCIDENT

- SME SUPPORT



Site Assessment



Risk Matrix



Solutions



Selection



Implementation





POST INCIDENT

- SME SUPPORT
 - Transition
 - **HAZWATCH**
 - Decommissioning



TRANSITION

- AHJ Transfer
- Regulatory Bodies
- Chain of Custody
- Continuity of Care
- Maintain Scene Stability
- Identify Investigative Needs
- Dehazard Investigative Objectives
- **HAZWATCH**



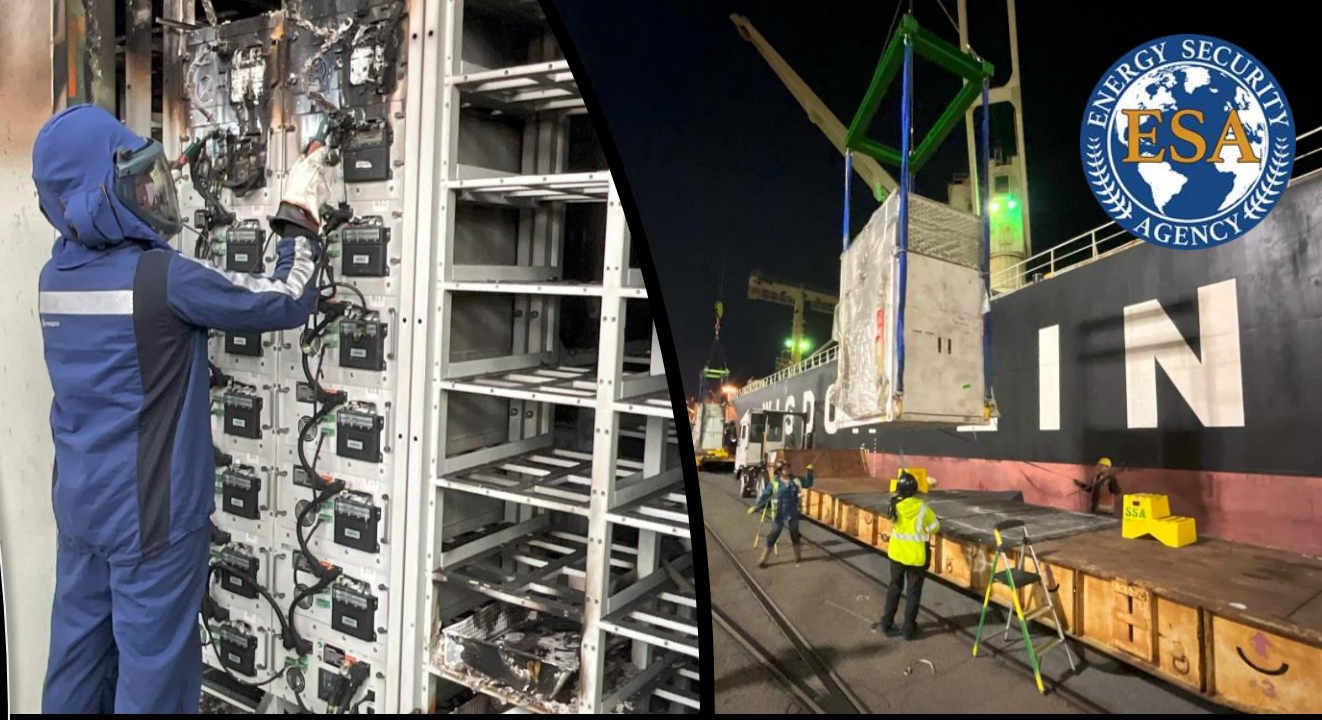
HAZWATCH

- Fire and Hazmat Specialists
- Battery Specialists
- Mitigation Capable
- Special Resources
- Environmentally Adaptive and Certified
- Vetting with Operational Clarity



DECOMMISSIONING

- Risk Management Assessment
- Strategic Plan
 - Quality, Time, Cost
 - Dispositioning – Testing Data and Inspection
 - Regulatory Compliance – Validation Reporting
 - Packaging
 - Recycling
 - Transport
- Site Restoration
- **HAZWATCH**



DISPOSITIONING

- EOL versus DDR
- Competency to declare
- Regulatory Vetting
- Cost Implications
- Procurement Implications
- Time Implications
- Discharging



NONVISUAL

Internal/external short circuit protection

Voltage variants

Isolation status



VISUAL

Acute Hazard (gas, fire, coolant, electrolyte)

Swelling

Discoloration

Corrosion

Odor

Loose/Damaged wires

Damaging Use/Misuse



PROCESSING

- EOL versus DDR
- Competency to declare
- Regulatory Vetting
- Cost Implications
- Procurement Implications
- Time Implications
- Discharging

Packing

- 49 cfr certified workforce
- PG1, PG2, EOL
- Silica Dioxide Amorphous vs Crystalline
- Battery Preparation
- Permit Applied

Transport

- PHMSA/DOT Compliance
- Proper Securement
- Compliant Operators
- Route Selection
- Emergency support

Recycling

- Network
- Special requirements
- Rate of processing
- Circular processing

CASE STUDY



- Pre Incident
 - Established Response Capability with SME.s
- Incident
 - Rapid Response and Compliance
- Transition
 - A – B, B – C Transport Logistics
- Mitigation
 - Dispositioning – Testing Data and Inspection
 - Packaging
 - Recycling
 - Transport
- FIREWATCH INTEGRATION



CASE STUDY

- Pre Incident
 - Not Established
- Incident
 - Challenges
- Transition
 - A – B, B – C Transport Violations
 - Delayed SME Approval – 3 Weeks
 - Disposition Conflict
 - Responsible Party Conflict
 - Litigation and Access Challenges
- **FIREWATCH NOT INTEGRATED**
- Mitigation
 - Delayed Approval
 - Delayed Access
 - Delayed Resources



CASE STUDY

- Pre Incident
 - Established through Owner
- Incident
 - Significant Delays – Operational complexity
 - Responsible Party Identification
 - Safety and Environmental Considerations
- Mitigation
 - Single Source plus Maritime Salvage/Firewatch
 - Logistics and Procurement
 - Efficiency
 - Compliance through demonstrated expertise
 - International Standard





CASE STUDY

- 52 Vehicles
- Operational Precision
- Resource Development
- Scalable Solutions
- Battery Dismantling
- Discharging



ENERGY SECURITY AGENCY

- More Information Can be found at www.energysecurityagency.com
- Call the ESA Response Center 24/7 to reach a Response Specialist at **855-ESA-SAFE**
- Email the ESA at info@energysecurityagency.com

