

ThunderBank

Emergency Action Plan

LIGHTNIN 24/7 EMERGENCY

678-472-5682

470-244-3905

877-433-0313

Leave a voicemail or text if no immediate response. Numbers listed in priority order.

SECTION A

Production Crew

SECTION B

Fire Department

SECTION A

Production Crew

How to use this document. The production lead should review Section A before show start and brief any crew member who may interact with the ThunderBank. Keep the laminated **Production Crew Emergency Card** visible near the unit and the **Fire Department Quick Reference Card** ready to hand off on arrival. No signed acknowledgement is required — the fact that this document is provided and posted is the record of due diligence.

1. What this unit is

The ThunderBank is a mobile lithium battery energy storage system (BESS) housed in a truck box. It stores 270 kWh of LiFePO₄ (lithium iron phosphate) at 48 V DC nominal and delivers up to 90 kVA of 208 V 3-phase AC power to the fleet ("ThunderBolts").

Charge sources (four independent paths):

- **3-phase shore** — up to 275 A per leg at 208 V (camlocks on the front-right exterior)
- **Single-phase trickle chargers** — two 50 A single-phase inputs (one hot leg each)
- **Truck engine-driven alternator** — provides DC charging while the truck engine is running. Switch is located **left of the steering wheel** in the cab. If the switch's indicator light is illuminated, the alternator has faulted; leave the switch **OFF** until Lightning clears the fault.
- **Rooftop solar** — ~2,900 W of solar panels feed DC into the bank via an onboard charge controller. Unlike the other three paths, solar charging **continues even after the EMERGENCY STOP is pressed** — daylight on the panels still drives current into the batteries. Cover the panels with an opaque tarp if you need to fully stop charging during an incident. The PV isolation breakers for the onboard solar live on the **right wall at the front, beneath the MPPT**, in a shielded breaker box (inside the truck box; not field-accessible during a fire).
- **Customer-added external solar (optional)** — three additional external PV inputs are available so a customer can connect supplemental solar panels. The isolation breakers sit in a shielded breaker box at the **rear left corner of the truck box, near the fire extinguisher**. These breakers **are externally accessible** and can be flipped off in an emergency to isolate customer-added solar input.

Power outputs beyond the ThunderBolt feed:

- **Level 2 EV charger** — stored in a black jockey box on the front right of the truck box. The customer deploys and plugs it in to charge an electric vehicle from the bank's AC output.

Hazards to be aware of: high-voltage AC at connection points, stored electrical energy in the batteries, and standard vehicle hazards (truck fuel, engine fire, collision).

The battery system is built and tested to recognized UL and IEC safety standards: UL 1741, UL 1973, and UL 9540A (or equivalent — IEC 62619, IEC 62620, UN 38.3). UL 9540A specifically validates that **thermal runaway in a single cell does not propagate** to adjacent cells or modules. LiFePO4 is the safest common lithium chemistry — its thermal-runaway onset is far higher than NMC chemistries, and it does not release oxygen during decomposition — but it still demands respect.

2. Emergency contacts

LIGHTNIN PRIMARY (24/7)
678-472-5682

LIGHTNIN BACKUP (24/7)
470-244-3905

LIGHTNIN 3RD PRIORITY (24/7)
877-433-0313

Leave a voicemail or text if no immediate response. If you see active fire or smoke, **CALL 911** first, then call Lightnin.

3. Quick-response table

IF YOU SEE / HEAR / SMELL...	DO THIS
Smoke or flame from the truck box	1. Hit the EMERGENCY STOP button (rear right corner, exterior). 2. Call 911 . 3. Call Lightnin. 4. Evacuate to 50+ ft. Do NOT open the personnel door.
Burning-plastic or sweet/chemical odor	Hit EMERGENCY STOP , evacuate, CALL 911 , call Lightnin. Treat as a fire indicator until cleared.
Hissing, popping, or unusual sound from box	Hit EMERGENCY STOP , CALL 911 to be safe, then call Lightnin. <i>Skip the action only if you can clearly identify the sound as routine: truck airbags, tires, inverter clicks, breaker trips.</i>
Visible melting, scorching, or discoloration at a camlock or 120 V Edison receptacle	Likely a bad cable or overloaded cable specs — not a fire indicator on its own. Call Lightnin and verify no other problems. Do not reuse the cable or plug without maintenance — the affected connector must be inspected and replaced before the unit is returned to service.
Small flame or arcing at an exterior camlock or Edison	Hit EMERGENCY STOP first. If safe to do so , use the ABC fire extinguisher (attached to the bumper, rear left of the truck) to knock down the flame. CALL 911 if the fire does

IF YOU SEE / HEAR / SMELL...	DO THIS
receptacle (no fire inside the box)	not immediately go out, spreads, or you suspect it may have reached inside the box. Call Lightnin. Do not risk your personal safety — when in doubt, evacuate.
VRM alert: panel temp at or above 150°F	Hit EMERGENCY STOP , call Lightnin. Inspect exterior and VRM data for obvious cause (e.g. loose connection, water intrusion). Do not open the personnel door without Lightnin guidance. At 160°F the ThunderBank automatically triggers EMERGENCY STOP.
Electric shock / arcing at a connection point	Do not touch the person if still in contact with the source. Hit EMERGENCY STOP . CALL 911 . Call Lightnin.
Water leaking into the truck box	Hit EMERGENCY STOP . Disconnect external shore feed if safe to do so. Stay back, call Lightnin.
Truck fuel spill (truck fuel tank or engine)	Shut off the truck engine. Hit EMERGENCY STOP on the ThunderBank. Switch the alternator off (left of steering wheel). Eliminate ignition sources, evacuate 50+ ft, call Lightnin and follow standard fuel-spill protocol for your site.
Truck engine fire or engine-bay smoke	Shut off the engine. Switch alternator OFF (left of steering wheel). Hit EMERGENCY STOP on the ThunderBank. CALL 911 then call Lightnin. A truck fire can spread to the BESS — do not assume the box is unaffected just because the cab is the visible source.
Vehicle collision / accident	Do not approach the truck box until safe. If accessible and safe, hit EMERGENCY STOP and switch the alternator off. Call Lightnin. CALL 911 if you notice other signs of emergency (injury, fire, smoke, fuel leak, arcing).

ABC fire extinguisher — when to use it. An ABC-rated fire extinguisher is mounted on the bumper at the **rear left** of the truck. It is appropriate **only** for a **small, external, isolated** electrical fire (a single camlock or Edison receptacle arcing or flaming, with no fire inside the truck box). Hit **EMERGENCY STOP** first, then use the extinguisher if you can do so safely from outside the box.

For anything larger, any fire inside the box, any thermal-event indicator on the bank itself, or any uncertainty: **do not use the extinguisher**. Evacuate, **CALL 911**, call Lightnin. **Do not risk your personal safety**. When in doubt, evacuate.

4. EMERGENCY STOP button

Location: Rear right corner of the truck box, to the right of the AC output panel. Marked with a red and white **EMERGENCY STOP** decal with an arrow pointing to the button.

How to use: Press the button firmly. It will lock in place. To reset, twist clockwise per the decal arrow (only after Lightnin clears the unit).

What it does:

- Cuts power to all three inverter banks
- Disconnects AC Input
- Disconnects AC Output
- Isolates the batteries (they remain online but no current flows in or out)

Before resetting: the incident that triggered the EMERGENCY STOP must be resolved (fire out, thermal event passed, fault diagnosed) and the scene confirmed safe by production crew. **Do not reset the EMERGENCY STOP until you have notified Lightnin and Lightnin has cleared the unit.**

Most events are inverter faults or false positives — Lightnin can guide the reset over the phone in those cases. For a true thermal or fire event, the unit returns to the shop for inspection before it is cleared.

5. Truck alternator (third charge source)

The truck's engine-driven alternator can charge the bank while the truck is running. In any emergency, you must shut this down in addition to the **EMERGENCY STOP**:

- **Shut off the truck engine.**
- **Switch the alternator OFF.** The switch is in the cab, **left of the steering wheel**.

If the alternator switch's indicator light is illuminated, the alternator has faulted. Leave the switch in the **OFF** position until Lightnin clears the fault.

6. Early fire detection — what to expect

Each AC panel has a built-in temperature sensor and electrical fire suppression housed in a **sealed enclosure**. The interior of the truck box is air-conditioned to 80°F; the panel sensors normally read within a few degrees of ambient. When a sensor reaches **150°F**, a VRM alert is sent to anyone with notifications enabled on this unit.

A reading at or above 150°F means **something is wrong** — the safest assumption is to shut down and investigate before risking a fire. We cannot directly confirm whether the panel's suppression has deployed, but we can monitor the temperature trend in VRM.

What is normal? Compartment temperatures of **100–120°F** are not necessarily a fire indicator — that range usually means the air conditioning has failed or is struggling, not that a thermal event is in progress. Call Lightnin so we can diagnose the air conditioning and check telemetry. The 150°F alert is the threshold where a fire risk is real.

If you receive a 150°F alert: hit the **EMERGENCY STOP** button, then call Lightnin. From the outside of the box, look for loose connections, water intrusion, or anything visibly abnormal. Check the VRM Advanced page for battery and compartment temperatures, alarm logs, and AC input/output voltages and currents outside normal limits. If you see any fire indication, **CALL 911** immediately and notify Lightnin. **At 160°F, the ThunderBank automatically triggers EMERGENCY STOP.**

7. Personnel door — do NOT open during a fire

The truck-box personnel door is locked. The driver does not have the combination. The door is intended for **maintenance or emergency only**.

During an active or suspected fire, do not open the door. Opening it floods the box with oxygen and can accelerate the fire. The correct response is: hit **EMERGENCY STOP**, switch the alternator off, evacuate, **CALL 911** then call Lightnin. The fire department will either get the combo over the phone from Lightnin or force entry with an axe, in coordination with Lightnin.

8. DO NOT

- ✗ Do not open the personnel door during a fire, suspected fire, or any 150°F+ alert without Lightnin guidance
- ✗ Do not touch any camlock connection (Green / White / Red / Blue / Black) when the unit is energized
- ✗ Do not attempt to extinguish a battery fire yourself — this is a job for the fire department
- ✗ Do not spray water on the AC panels while energized — the panels have their own suppression
- ✗ Do not reset the **EMERGENCY STOP** button until Lightnin has cleared the unit
- ✗ Do not restart the truck engine after an alternator-fault indicator until Lightnin clears it
- ✗ Do not allow untrained personnel inside the truck box

9. Evacuation

1. Hit the **EMERGENCY STOP** button (rear right corner of truck box)
2. **Shut off the truck engine** and switch the alternator **OFF** (left of steering wheel)

3. Move all personnel to at least **50 ft** from the truck
4. **CALL 911** if there is any fire, smoke, or suspected thermal event
5. Call Lightnin at 678-472-5682 (backup 470-244-3905, third priority 877-433-0313)
6. Establish a single point of contact for the fire department on arrival; brief them on what was seen, when, and what was done
7. Hand them the **Fire Department Quick Reference card** kept with this plan

Fire Department

1. Quick facts

SYSTEM TYPE

Mobile BESS, truck-box housed

BATTERY CHEMISTRY

LiFePO₄ (lithium iron phosphate)

CAPACITY

270 kWh total · 243 kWh usable

DC BUS

48 V nominal

AC OUTPUT

208 V 3-phase / single-phase, 90 kVA

COMPONENT CERTIFICATIONS

UL 1741 · UL 1973

UL 9540A OR EQUIVALENT

What each standard covers: **UL 1741** — inverter / power conversion equipment safety and grid interconnection. **UL 1973** — battery system safety for stationary, motive, and light electric rail applications. **UL 9540A** — standard test method for evaluating thermal runaway fire propagation in BESS.

What we mean by “or equivalent.” Some units' batteries have met the pertinent IEC tests — **IEC 62619** (lithium cell / battery safety for industrial applications), **IEC 62620** (lithium cells / batteries for industrial applications — performance and dimensions), and **UN 38.3** (transport safety testing for lithium batteries per the UN Manual of Tests and Criteria, Section 38.3) — and are also going through UL 9540A testing. UL 9540A certification is pending for those units.

LiFePO₄ is water-suitable for thermal events — copious water flow is the recommended suppression and cooling approach. Unlike NMC chemistries, LiFePO₄ does not undergo violent thermal runaway and produces less toxic vapor, but SCBA is still mandatory.

2. On-arrival checklist

1. Confirm the **EMERGENCY STOP** button has been pressed (rear right corner of truck box, red and white decal). If not, press it before approaching connection points.
2. Confirm the **truck engine is OFF** and the alternator switch (left of the steering wheel in the cab) is in the **OFF** position. The alternator is a third DC charge path that must be killed in addition to the **EMERGENCY STOP**.
3. Visually confirm camlock connections at AC Input and AC Output are not arcing.

4. Establish a **50 ft minimum stay-back zone** upwind of the truck box. Expand to **100 ft** if active venting, audible relief, or visible flame is observed.
5. Call Lightnin at **678-472-5682** (backup 470-244-3905, third priority 877-433-0313) for live consultation. Lightnin can grant incident command real-time VRM telemetry access (cell temperatures, voltages, alarms).

Vehicle hazards remain: the BESS is housed in a truck, so standard automotive risks (engine fire, fuel tank, collision damage) are in play independent of the battery system. A truck-cab fire can spread to the BESS in the box. Treat the box as potentially compromised any time the truck has been in a collision, even with no visible BESS damage.

3. Firefighting approach

For a battery thermal event

- **Water suitable.** LiFePO₄ responds well to copious water for cooling. Apply liberally; do not ration. Continue water application until cell temperatures stabilize.
- **Reignition risk:** monitor the unit for at least **24-48 hours** after extinguishment. Lithium battery fires can re-light from residual heat trapped in damaged cells.
- **PPE:** full structural turnout gear with SCBA mandatory. LiFePO₄ produces less toxic vapor than NMC chemistries but still releases HF gas and organic vapors during thermal runaway.
- **Runoff:** water used on the unit may carry electrolyte residue and metals. Contain runoff where practical and notify environmental authorities per local protocol.

For an electrical fire in an AC panel

- Each AC panel has integrated electrical fire suppression in a **sealed enclosure**. Activation cannot be directly confirmed, but Lightnin can monitor compartment and panel temperature trends in VRM as a proxy for whether the event is contained.
- Confirm **EMERGENCY STOP** is pressed and alternator switch is OFF before approaching the panel directly.
- Treat as a standard electrical fire (Class C) until you confirm batteries are not involved.

4. Hazard awareness

- Stored DC energy: ~270 kWh at 48 V even when the **EMERGENCY STOP** is pressed. Batteries are isolated from the inverters but still hold a charge.
- **Rooftop solar continues to charge the bank in daylight even after EMERGENCY STOP is pressed.** To stop the solar charge path entirely, cover the rooftop panels with an opaque tarp.
- Re-energization: the **EMERGENCY STOP** is mechanically latched. Do not reset until Lightnin clears the unit.
- Truck-box panels may be hot to the touch in the area of an active event — thermal-imaging camera recommended before approach.

5. Disconnect and connection locations

EMERGENCY STOP	Exterior, rear right corner of truck box, to the right of the AC output panel. Red/white decal with arrow.
Alternator switch	Inside the truck cab, left of the steering wheel . Kills the engine-driven DC charge path. Illuminated indicator = alternator fault; leave OFF until cleared.
AC Output	"Waterfall" panel on the right side of the rear wall (exterior). Camlocks: Green / White / Red / Blue / Black.
AC Input	Exterior, front right side of truck box, labeled " Input Only ". 3-phase camlocks mounted vertically. Single-phase camlocks mounted horizontally, directly below the 3-phase set.
Internal AC panels	Two enclosures in the ceiling, center of the truck box. Forward enclosure = AC Input. Rear enclosure = AC Output. Both have integrated temperature sensors and electrical fire suppression.
DC bus bars (per inverter bank)	Located beneath each of the three inverter banks . Individual DC runs from each bank rise into the ceiling and join at the bus combining point. Internal — not field-accessible during a fire.
DC bus combining point	Ceiling, forward of the AC Input panel. Where the three per-bank DC runs join into a single bus before reaching the battery isolation.
Rooftop solar (~2,900 W)	Solar panels on the roof feed DC into the bank via an onboard charge controller. Continues charging even after EMERGENCY STOP is pressed — cover panels with an opaque tarp to fully stop the solar charge path.
Onboard PV breakers (rooftop solar)	Inside the truck box, right wall at the front, beneath the MPPT , in a shielded breaker box. Not field-accessible in a major fire — do not open the personnel door to reach them; use the rooftop tarp instead. Useful for tech-level isolation during maintenance, MPPT fault, or controller service.
External PV breakers (customer-added solar)	Exterior, in a shielded breaker box at the rear left corner of the truck box, near the ABC fire extinguisher . Three breakers isolate the optional customer-added external solar inputs. Field-accessible — can be flipped off during an incident to isolate any customer-added solar input.
Level 2 EV charger	Stored in a black jockey box on the front right of the truck box. Customer deploys it to charge an electric vehicle from the bank's AC output.

Display (exterior repeater)

Exterior, rear right corner of the truck box — inside an unlocked grey Polycase enclosure. Same live data as the interior Ekran: real-time power flow and alarms (Alarms = 4th blue tab at top of screen). **Use this without opening the personnel door.** The Ekran GX itself is mounted inside the locked compartment, on the left, ~5 ft above the floor, but is not needed for monitoring during an incident.

6. Personnel door access

The truck-box personnel door is combination-locked. Two access paths:

1. **Call Lightnin for the combination over the phone.** Preferred when there is no active fire.
2. **Force entry with an axe.** Acceptable when speed matters and Lightnin cannot be reached.

Before opening the door during an active fire event: coordinate with Lightnin if possible. Opening the door floods the truck box with oxygen and can accelerate combustion. AC-panel suppression is inside a **sealed enclosure**, so opening the truck-box door does not disturb the suppression atmosphere — the concern is purely about adding oxygen to a thermal event in the box.

7. Lightnin coordination

Lightnin 24/7 emergency:

PRIMARY

678-472-5682

BACKUP

470-244-3905

3RD PRIORITY

877-433-0313

Lightnin can grant the incident commander real-time VRM portal access (battery cell temperatures, voltages, alarm history, AC input/output power) for the duration of the incident.

Reference & Disclaimers

A. Off-gassing during a battery thermal event

Off-gassing typically **precedes visible flame by minutes** — it is the earliest reliable warning of a lithium battery thermal runaway. The byproducts and their warning signs are well-documented for LiFePO₄ chemistry in Sandia National Laboratories and NFPA Research Foundation studies; the same profile applies to this unit.

- **White or grey vapor venting** from the truck box, even without flame, indicates electrolyte vaporization is in progress. **Treat as a fire event:** hit **EMERGENCY STOP**, evacuate to 100 ft, **CALL 911**, call Lightnin.
- **Sweet, ether-like, or solvent-like odor** — electrolyte carbonate vapor (DMC, EMC, DEC). Distinctive enough that crew should learn to recognize it.
- **Pungent, acidic, eye/throat-irritating odor** — hydrogen fluoride (HF) gas. LiFePO₄ produces less HF than NMC chemistries but does still release some during runaway. **Evacuate upwind.**
- **Burnt plastic odor** — internal insulation or wiring damage. Often signals the event has progressed beyond initial cell venting.

B. Customer / production-side pre-show safety checks

Because the ThunderBank moves between sites, the EAP cannot pre-fill site-specific information. Before each show, the production team must identify and be aware of:

- Production site street address (for 911 dispatch — lat/lon if no street address)
- Nearest hospital with an emergency room
- Local fire department non-emergency number and their station address
- On-site safety officer or production manager name + phone
- Designated evacuation assembly point (visible from the truck location)
- Confirmation that the ABC fire extinguisher (rear-left bumper) is present and within its inspection date

C. Post-incident reporting

After any incident involving the ThunderBank (whether or not the unit was damaged), report the following to Lightnin as soon as it is safe to do so. Lightnin uses this to investigate root cause and update procedures.

- Date, time, and duration of the event

- Location (site address)
- What was first seen / heard / smelled, and by whom
- Weather conditions (temperature, humidity, rain, lightning)
- What was being drawn from the unit at the time (rough kW or what ThunderBolts were active)
- What charge source(s) were active (3-phase shore / trickle / alternator / solar)
- Actions taken (EMERGENCY STOP timestamp, alternator off, evacuation, extinguisher used, 911 / FD called)
- Photos or video of the unit and any visible damage — only if safe to capture

D. Mobile BESS regulatory context

The ThunderBank is a mobile battery energy storage system. The principal published BESS standards — NFPA 855 ("Standard for the Installation of *Stationary* Energy Storage Systems"), IFC 1207, and NEC Article 706 — were written for stationary installations in fixed buildings. By their own terms they do not directly govern mobile BESS, and as of 2026 there is no unified US regulatory standard specific to mobile BESS.

Lightnin's approach is to follow stationary BESS best practices as closely as possible where they map to a mobile build. The ThunderBank is built to best electrical practices, and component-level safety is validated to recognized standards listed in the Quick Facts — UL 1741, UL 1973, and UL 9540A (or the equivalent IEC 62619 / IEC 62620 / UN 38.3). These component certifications apply regardless of stationary vs. mobile installation.

Where a local AHJ has mobile-specific or event-specific requirements, those supersede this document. Operators should confirm AHJ requirements during the pre-show safety check described in section B.

E. Disclaimer and scope

This document is **guidance only**, prepared by Lightnin Production Rentals to support the safe operation and emergency response for the ThunderBank. It does **not** replace site-specific safety plans, manufacturer documentation for installed components, or the directives of an on-scene Incident Commander or Authority Having Jurisdiction (AHJ).

In any conflict between this document and the directives of an on-scene IC, AHJ, or applicable code, the IC/AHJ/code prevails.

Lightnin makes no warranty, express or implied, that this document covers every possible failure mode or emergency scenario. Customers and operators are responsible for completing their own site-specific risk assessment, including (where applicable) coordination with local fire, EMS, and code officials. The Safety Data Sheet (SDS) for the battery cells is available on request from Lightnin.

F. Revision history

REVISION	EFFECTIVE	SUMMARY OF CHANGES
Rev 1	2026-06-12	Initial release.