

Appendix C

Emergency Services, Fire and Safety Plan

Mountain Peak Energy Storage
Conditional Use Permit Application
September 2025



Mountain Peak BESS

EMERGENCY RESPONSE PLAN

Preliminary Draft | August 2025

Summary

This document serves as the Preliminary Emergency Response Plan (ERP) for the Mountain Peak energy storage facility to be located at 00000 South Simpson Road near Mentor, Kansas. This Preliminary ERP will become the final ERP once final installation details are determined and input from the local Fire District is received and added to the ERP.

This preliminary ERP provides information and instructions to guide first responders in preparing for, and safely responding to, an incident, fire, or other emergency associated with the energy storage facility.

LIFE SAFETY SHALL BE THE HIGHEST PRIORITY DURING ANY TYPE OF EVENT.

The plan will be updated if the battery manufacturer changes or when conditions that affect the response, considerations, and procedures change. While the final selection of manufacturer for the BESS has not yet been made as of the writing of this document, this document has used the Tesla Megapack 2 XL as an underlying assumption to provide a sufficient level of detail. Any selected manufacturer will have similar or greater safety features than the units described herein.

Prepared For:

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EMERGENCY CONTACT INFORMATION

IN CASE OF EMERGENCY CALL 911

LOCAL FIRE DISTRICT

Saline County Rural Fire District 2

Phone: (785) 452-5898
Address: 697 E Mentor Road
 Mentor, KS 67401

LOCAL POLICE DEPARTMENT

Saline County Sheriff Department

Phone: (785) 826-6500
Address: 800 E Pacific Ave
 Salina, KS 67401

LOCAL FIRE DISTRICT

Saline County Rural Fire District 1

Phone: (785) 826-0658
Address: 612 Maple Street
 Gypsum, KS 67448

HOSPITAL EMERGENCY ROOM

Salina Regional Health Center

Phone: (785) 452-7000
Address: 2265 S 9th St
 Salina, KS 67401

LOCAL BURN CENTER

Ascension Via Christi Regional Burn Center

Phone: (316) 268-5388
Address: 929 N Saint Francis Ave
 Wichita, KS 67214

LOCAL HEALTH FACILITY

Salina Regional Urgent Care

Phone: (785) 452-6000
Address: 2265 S 9th St
 Salina, KS 67401

TESLA 24-HOUR OPERATIONS CENTER

Tesla Hotline (for Emergency Use)

Phone: (650) 681-6060
Address: 13101 Tesla Rd
 Austin, TX 78725

SYSTEM OWNER / OPERATOR

Mountain Peak Energy Storage LLC

Phone: (832) 525-1238
Address: 1780 Hughes Landing Blvd, # 675
 Woodlands, TX 77381

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ENERGY STORAGE SYSTEM INFORMATION

Site Location: 00000 S Simpson Road
Mentor, KS 67410
APN: 085-128-28-0-00-00-001.01-0

Make / Model: Tesla Megapack 2 XL
Total MW / MWh: \approx 350 MW / 1400 MWh
kW / kWh per Unit: \approx 975 kWp / 3900 kWh
Units: \approx 389

OVERPRESSURE PROTECTION

Internal sparker system and pressure-relief vents automatically combust flammable gases released during a thermal runaway event and direct pressure upwards and safely from the enclosure.

WATER SUPPLY

There will be two 24,000-gallon water tanks for fire suppression and protection operations. There will be one tank at each entrance gate.

**** Note: This section will be updated if a different battery manufacturer is selected ****

PROJECT INFORMATION

Project Name	Mountain Peak Energy Storage LLC Emergency Response Plan
Project No.	23-20244
Prepared For	Mountain Peak Energy Storage LLC 1780 Hughes Landing Boulevard, Suite 675, Woodlands, TX 77380
Revision No.	Version 1.4
Document No.	TBD
Date of Issue	Preliminary Draft

REVISION HISTORY

Revision Number	Date Provided	Type	Substance of Change
1.1	07/21/2025	Edits	Edits based on customer comments.
1.2	08/04/2025	Additional edits	Additional edits based on customer comments.
1.3	08/21/2025	Additional edits	Additional edits based on emails from Rowan
1.4	8/25/2025	Additional edits	Edits based on Saline County comments.

Note 1: The information in this document is subject to change while in PRELIMINARY status and may be modified in the event of modifications to equipment or other factors affecting the design of the system or site.

Note 2: During the operating life span of the project, it is expected that this document shall be reviewed annually, and that all pertinent information shall be appropriately updated as necessary. This ERP is compiled based on the current design and usage at the time of this writing.

Note 3: **Highlighted** items are to be finalized prior to construction and are subject to change.

IMPORTANT NOTICE AND DISCLAIMER

Energy Safety Response Group LLC (ESRG) is providing an interim preliminary version of this document based on an "as-designed" system. This document should not be provided externally until agreed by all responsible parties.

Upon acceptance of this "as designed" interim preliminary version, which may be made public as an "as designed release," ESRG shall treat this document as ready for release but shall not mark the document as "as-built final" until ESRG can confirm, via personnel on site, that the system, "as-built" aligns with the reviewed and reported design.

The industry, related technology, and best practices are rapidly evolving and changing regularly. It has been observed that changes often occur to a project through the construction phase, be they to the battery itself or to the balance of system. As such, an "as-designed release" document should be considered final only if no changes are made to the system from design to construction to completion. If it is 100% accurate, it will be released unchanged. However, should ESRG encounter deviations from the design, the document will be amended accordingly per the design changes and then released as a final document.

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ACRONYMS

AC (A/C)	Alternating Current
AHJ	Authority Having Jurisdiction
AR	Arc-Rated
BMS	Battery Management System
DC (D/C)	Direct Current
E-Stop / EPO	Emergency Stop / Emergency Power Off
ERP	Emergency Response Plan
EMS / ESMS	Emergency Management System / Energy Storage Management System
ERG	Emergency Response Guide (generic, product-level emergency response guide)
ESRG	Energy Safety Response Group
ESS / BESS	Energy Storage System / Battery Energy Storage Management System
FACP	Fire Alarm Control Panel
IC	Incident Commander
ICS	Incident Command System
kW	Kilowatt(s)
kWh	Kilowatt-hour(s)
LFL / LEL	Lower Flammability Limit / Lower Explosive Limit
LFP	Lithium Iron Phosphate
MW	Megawatt(s)
MWh	Megawatt-hour(s)
O&M	Operations and Maintenance
PCS	Power Conversion System
PPE	Personal Protective Equipment
SCBA	Self-Contained Breathing Apparatus
SDS	Safety Data Sheets
SME	Subject Matter Expert
SOC	State of Charge
TSC	Tesla Site Controller
UICS	Unified Incident Command System
UFL / UEL	Upper Flammability Limit / Upper Explosive Limit

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1.0 INTRODUCTION

1.1 Scope and Purpose

This Emergency Response Plan (ERP) is provided for the Mountain Peak Battery Energy Storage System (ESS or BESS) facility located near Mentor, Kansas. The purpose of this document is to provide guidance and pertinent information regarding the roles, responsibilities, and chain of communication and command of the System Owner / Operator, Property Owner, and other required Subject Matter Experts (SMEs) for preparing for, and safely responding to, a fire, overpressure event, or other battery-related incident requiring a public safety response at the energy storage facility.

The Operations and Maintenance (O&M) Manager for the project is an employee of Mountain Peak Energy Storage LLC. "On-site personnel" include all individuals on the facility property who are direct employees of the Owner / Operator or affiliated contractors. The Owner / Operator and contractors are similarly responsible for establishing and maintaining contractor-specific Emergency Response Plans and reporting procedures that will work in conjunction with the overall energy storage facility plan.

Life safety shall be the highest priority during any type of event.

1.2 Activation

This Emergency Response Plan shall be activated during any emergency response to a battery-related incident on-site.

1.3 Authority Having Jurisdiction (AHJ)

The Authority Having Jurisdiction (AHJ) for this project is the Saline County Planning Department, Saline County Emergency Management, and the Saline County Fire District.

1.4 Incident Command System (ICS)

The System Owner / Operator, Subject Matter Experts, Remote Monitoring Facility staff, and all energy storage system-related personnel shall comply with the orders of the Incident Commander (IC) and the command staff.

1.5 Operations and Maintenance (O&M)

Operations and maintenance procedures for the energy storage facility and associated equipment are outside the scope of this document.

Please refer to manufacturer Operations and Maintenance manuals for all associated equipment related to the site prior to beginning any work on this installation.

1.6 ERP Update Process

1.6.1 Issuance and Revisions

Dates for preliminary version issuance, revisions, and final issuance of this ERP are provided on Page 5 of this document.

During project development and the AHJ review process, the design changes or other updates to pertinent information shall be reflected and shared with the AHJ.

Updates to this ERP based on any major material changes to the installation are the responsibility of the System Owner / Operator and other relevant entities required.

1.6.2 Annual Review

During the operating life span of this installation, it is expected that this document shall be reviewed annually, with all pertinent information updated as required and shared with the AHJ.

1.6.3 Plan Retirement

All decommissioning procedures shall be in accordance with the locally adopted fire code and shall be performed by trained and knowledgeable persons in alignment with the Decommissioning Plan provided for this installation. Decommissioning shall be performed under the supervision of the System Owner / Operator responsible for this installation.

Notification of decommissioning shall be provided to the Fire District by the System Owner / Operator responsible for this installation.

1.7 Fire District Training

Initial and recurring training shall be provided to local first responders and emergency response personnel. Training may also include a site visit to the facility, where a walk-through of the site shall take place. A log of all training shall be maintained by Mountain Peak Energy Storage LLC and provided to the AHJ when requested.

2 SITE OVERVIEW

2.1 Site Location

The Mountain Peak energy storage facility is to be located just south of the Eveyry Summit Substation near Mentor, Kansas. The site consists of 389 Tesla Megapack 2 XL ESS units providing approximately 350 MW / 1400 MWh of energy storage power and capacity, respectively.

**** Note: This section will be updated if a different battery manufacturer is selected ****

SITE INFORMATION	
Site Address:	00000 South Simpson Road Mentor, KS 67410 APN: 085-128-28-0-00-00-001.01-0
GPS Coordinates:	38°43'30" N LAT. and 97°32'35" W LONG.

Figure 1 – Google Map View

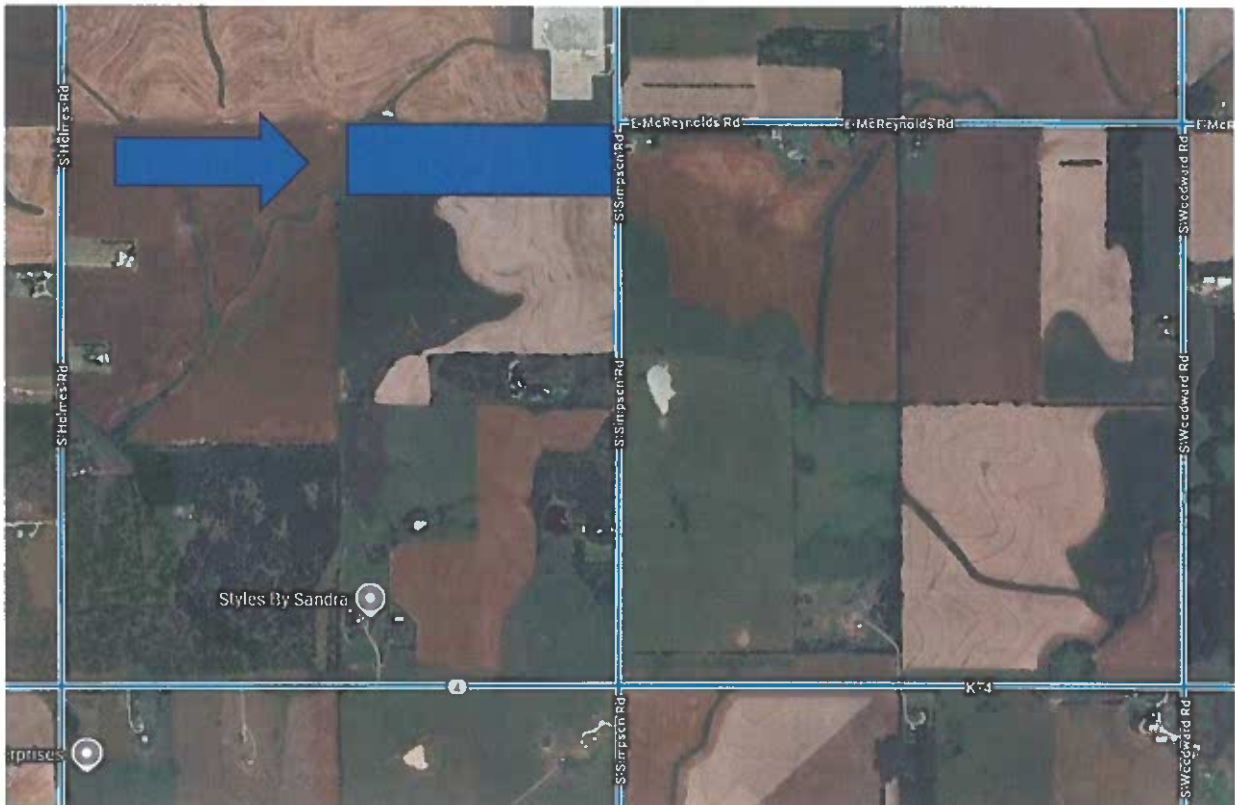
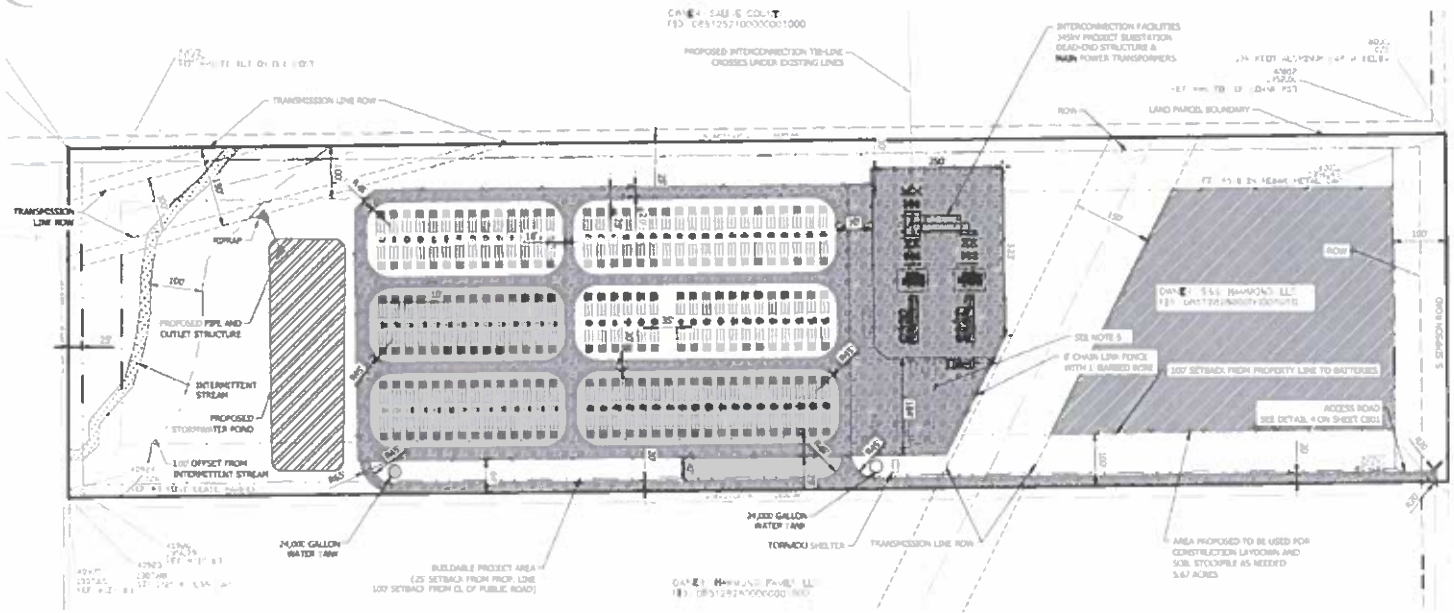


Figure 2 – Zoomed-in Google Map View



Figure 3-Preliminary Site Layout



2.2 Staging Area

Fire District Level 2 staging and safety assembly area for any onsite personnel is located along Simpson Road, south of Reynolds Road, and outside the BESS perimeter fence line, but will be dependent on wind conditions and wind direction.

It is recommended that Fire District staging is established at angles relative to the sides of the ESS enclosures to reduce potential impact from flying projectiles or debris from a possible overpressure event.

The Fire District should not attempt to enter the BESS fence line prior to incident size-up and coordination with the facility's designated subject matter expert (SME), or as otherwise determined at the ultimate discretion of the Incident Commander.

2.3 First Responders Station

A First Responder's Station, housing with a physical copy of the Emergency Response Plan (ERP), operational permits, O&M logs, and product manuals, will be provided at an approved location.

2.4 Site Access

Site access gates will be provided for fire access. The fire apparatus access lanes are currently proposed to be 20' wide with a minimum 45' turn radius and are proposed to meet the AASHTO HS20 loading standard with a load rating of 32,000 lbs/axle or 16,000 lbs/wheel. As noted above, the Fire District should not attempt to enter the site fence line unless there is a clear threat to life safety.

2.5 Equipment Access

The BESS enclosures are only accessible for maintenance purposes via cabinet-style enclosure doors and cannot be physically entered by personnel at any time.

The Fire District should not attempt to open the enclosure doors at any time.

2.6 Water Supply

There will be two 24,000-gallon water tanks for fire suppression and exposure protection operations. There will be one tank located at each entrance gate.

Even though water is being provided for fire-fighting operations, the proposed BESS units have demonstrated in full-scale fire tests that the fire will not spread between units, minimizing the need for water application to exposures. It is not anticipated, nor advised, that special extinguishing agents such as foam should be used throughout the incident.

A defensive approach is instead best practice, i.e., allowing all battery cells to be fully consumed/dissipate all energy and the fire to self-extinguish (while monitoring conditions of adjacent BESS units and the surrounding area for additional defensive actions, if needed).

More information regarding response approach, hazards, and best practices is detailed from [Section 6](#) to the end of this document.

2.7 Nearby Infrastructure and Natural Features

The following do not present an immediate concern, though they are notable features of the area surrounding the site (as shown in Figure 3 above). This project poses minimal risk to these features.

- **Substation to North** – Every Summit Substation is located just north of the BESS of the site
- **Overhead Utility Lines** – Overhead utility lines are located to the east and north of the site

2.8 Site Maintenance

The facility's interior access roads shall be maintained to guarantee accessibility to the site by emergency personnel, especially during inclement weather. Mountain Peak Energy Storage LLC shall ensure snow and ice removal, landscaping, and other ongoing upkeep activities are in place prior to construction.

3 ENERGY STORAGE SYSTEM OVERVIEW

The Mountain Peak Battery Energy Storage Facility utilizes 389 Tesla Megapack 2 XL ESS units (which shall also be referred to as “Megapack” units throughout this report), providing a total of approximately 350 MW / 1400 MWh of energy storage power and capacity to the electrical grid. Each Megapack unit consists of up to 24 battery modules utilizing lithium iron phosphate (LFP) battery cells.

External infrared (IR) flame detectors are provided for heat detection in the event of a thermal event from the Megapack units. The IR Detection Zones are shown in Figure 5.

**** Note: This section will be updated if a different battery manufacturer is selected ****

Additional information on fire protection systems is provided in Section 4 below.

Figure 4 – Typical Tesla Megapack 2 XL ESS Units

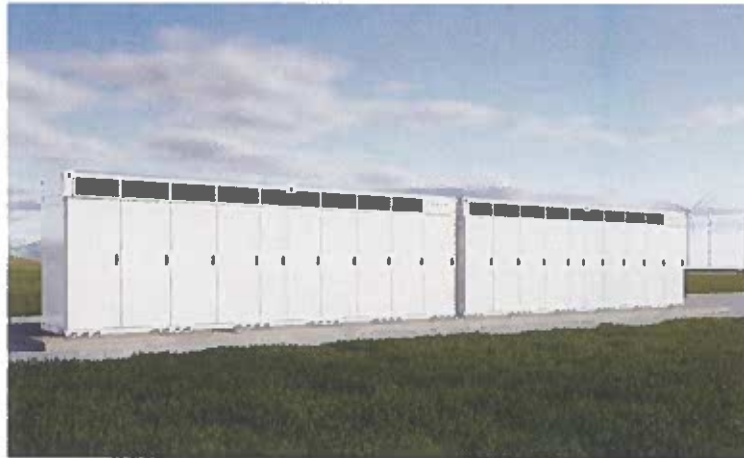
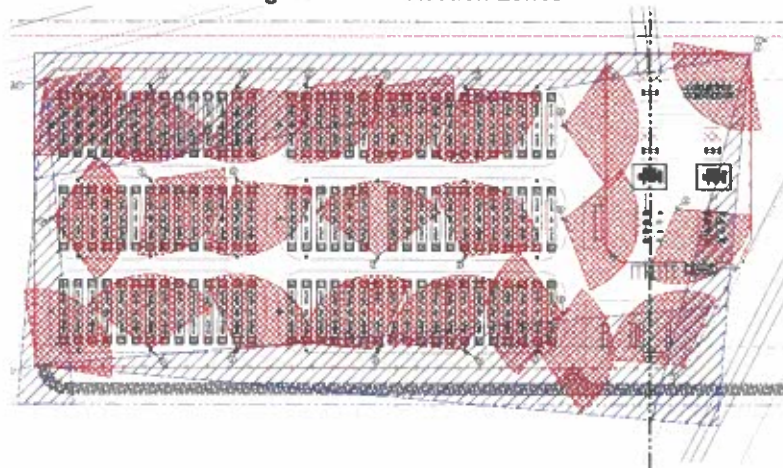




Figure 5 – IR Detection Zones



4 FIRE PROTECTION SYSTEMS

4.1 Overpressure Protection

Each battery enclosure will be equipped with overpressure protection in accordance with NFPA 855 and the IFC.

WARNING: Risk of Deflagration	
	<p>A deflagration / over-pressure event is a critical hazard, and any emergency on-site should always be addressed with full awareness of potential factors that may lead to such an event.</p> <p><u>Out of an abundance of caution, any failure or alarm condition should be assumed to result in a deflagration risk.</u></p>
WARNING: Risk of Re-ignition	
	<p>Do NOT assume the fire is out as the fire event unfolds. A lithium-ion battery fire, which has seemingly been extinguished, may flare up again if all cells within the enclosure have not been completely consumed.</p>

4.2 Emergency Shutoffs

Emergency shutoff is provided at multiple levels, though the Fire District should not engage with E-Stops, as ESS shutdown may adversely affect the electrical grid.

The Fire District should not engage with E-Stops, as an ESS shutdown may adversely affect the electrical grid. Any interaction with E-Stops should only be initiated in coordination with the System Owner and other SMEs as is deemed necessary.

4.2.1 Automatic E-Stop

Automatic shutdown is provided at different levels for the battery modules, depending on the type of failure:





- For major faults within battery module(s) – such as overtemperature, overcharge, or ground fault – the faulted module(s) will be isolated by D/C-D/C converters, disconnects, and/or D/C fuses, and an alarm will be generated. This may not result in a complete shutdown of the system.
- In the unlikely event that a large propagating thermal runaway occurs, the faulted Megapack is isolated by opening its A/C contactors.

4.2.2 Enclosure-Level E-Stop

Each BESS unit is equipped with an A/C circuit breaker located within the battery enclosure and is to be used **only by authorized maintenance or operations personnel.**

In the event of a battery-related failure, the Fire District should not approach any

battery enclosures or engage with any enclosure E-Stops.

CAUTION: Risk of Stranded Energy	
	Shutting off power to the ESS unit(s) does not de-energize the battery, and shock hazard may still be present. Always treat the batteries as Energetic Hazardous Materials, as they may maintain their State of Charge (SOC) long after the removal of power to the overall ESS.
WARNING: Risk of Fire and Deflagration	
 	Risk of fire or deflagration may be present in the event of a battery failure. The Fire District should not attempt to engage with any site or enclosure E-stops. Assistance in shutdown should be provided by the System Owner / Operator and any other required SMEs.
WARNING: Electrical Shock Hazard	
	In case of flooding, stay out of the water if any part of the ESS unit(s) or wiring is submerged.

4.3 Battery Management System (BMS)

An integrated Battery Management System (BMS) monitors key datapoints such as voltage, current, and state of charge (SOC) of battery cells, in addition to providing control of corrective and protective actions in response to any abnormal conditions. Each battery module is equipped with a dedicated BMS, with a battery's bus controller supervising output of all modules at the A/C bus level. In the event of any abnormal conditions, the BMS will generally first raise an information warning, and then trigger a corresponding corrective action should certain levels be reached. Critical BMS sensing parameters include:

- Over / under temperature limits
- Over / under voltage limits
- Over / under current limits
- Communications loss

5 FIRE DETECTION, ALARMING, AND NOTIFICATION

5.1 Fire Detection

The energy storage facility is equipped with multi-spectrum infrared (IR) flame detectors directed at the Megapack units. In the event of a battery-related fire or thermal event emanating from the Megapack units, the flame detectors shall report to the monitoring center.

**** Note: This section will be updated if a different battery manufacturer is selected ****

5.2 Remote Monitoring Facility

Remote monitoring of external IR flame detectors and BMS operation is provided by the 24/7 Tesla Operations Center. In the event of flame detection, system alarm and trouble signals are sent to the Tesla Operations Center, which calls the local 911 Dispatch Center and notifies the facility subject matter expert (SME)

In the event of a battery-related failure transmitted by the BMS, alarm notifications and other pertinent information on the state of the ESS shall be sent to the System Owner to inform potential emergency response procedures as needed.

Additionally, if more detailed information on the state of the Megapack units is required, the Tesla Network Operations Center should be contacted.

Table 1 – Tesla 24/7 Operations Center Information

<u>Tesla 24/7 Operations Center (for Emergency Use)</u>
☐ 24/7 Emergency Hotline: +1 (650) 681-6060
☐ Email Support: IndustrialStorageSupport@tesla.com

**** Note: This section will be updated if a different battery manufacturer is selected ****

6 GENERAL HAZARDS ASSOCIATED WITH BATTERY ESS

Several Lithium-ion battery failures are briefly described in the sections below. Specific response procedures for various incident scenarios are detailed in [Section 8](#) of this document.

Note: While the following hazards generally apply to all lithium-ion batteries, the proposed BESS units have demonstrated through full-scale fire testing that the protections integrated from battery to system-level sufficiently mitigate the possibility for a fault condition to propagate or cascade into a larger emergency or life-safety incident and are unlikely to occur overall.

6.1 Thermal Runaway


The defining characteristic of lithium-ion battery failures is a state known as thermal runaway. Thermal runaway is a chemical process where self-heating in a battery exceeds the rate of cooling, causing high internal temperatures, melting, off-gassing/venting, and in some cases, fire or an overpressure event. Thermal, mechanical, and electrical abuse can lead to thermal runaway; internal short circuit from manufacturing defects; or the development of metallic dendrites that form an internal short over time.


Flammable and potentially explosive gases (generally white in color) typically evolve when an ESS goes into thermal runaway and may be released in large quantities from battery cells or modules. Fire and explosive incidents may result, and precautions as described in the sections below should be observed.

6.2 Fire and Re-ignition

Lithium-ion battery fires burn extremely hot (upwards of 1,000 – 1,500°C) and are generally not easily extinguished. Fire growth may be slow, fast, or ultra-fast (e.g., during a deflagration event) in nature, and may last for several hours before the battery modules are completely consumed. Furthermore, even when a lithium-ion battery fire appears to be fully extinguished, re-ignition risk may still be present hours or even days after there are no visible signs of fire.

Application of water directly to affected battery modules may potentially prolong the incident, and the decision to apply water should be made in coordination with the System Owner / Operator and any other required SMEs.


WARNING: Risk of Re-ignition	
	<p>Do NOT assume the fire is out as the fire event unfolds. A lithium-ion battery fire, which has seemingly been extinguished, may flare up again if all cells within the enclosure have not been completely consumed. The risk of battery re-ignition can remain present for hours or even days after the smoke/flame is initially detected.</p>

NOTICE	
	<p>Indicators which may provide insight into what is happening or about to happen during an incident may include:</p> <ul style="list-style-type: none"> □ Smoke or flames □ Change in smoke color □ Change in velocity or volume of smoke production □ Sounds – popping and/or hissing □ Smell – sweet smell

6.3 Overpressure Event

Lithium-ion batteries may release flammable off-gases during thermal runaway, which, if allowed to accumulate within the enclosure, may create an explosive atmosphere, posing a serious risk to first responders and exposures within the facility's perimeter fence line. These gases may accumulate within the ESS enclosure at levels above the Lower Explosive Limit (LEL). At sufficiently high accumulations, gases can also exceed their Upper Explosive Limit (UEL), at which point ventilation may bring the environment back into flammable limits, thus creating a new deflagration risk.


It may be difficult to discern conditions within the enclosure if smoke and gas are not visible outside of the enclosure. Furthermore, a single battery cell may release enough flammable off-gas to generate an explosive atmosphere within the enclosure. Therefore, any failure or alarm condition should always result in the assumption of a potential deflagration risk.

WARNING: Risk of Deflagration	
	<p>A deflagration / over-pressure event is a critical hazard, and any emergency on-site should always be addressed with full awareness of potential factors that may lead to such an event.</p> <p><u>Any failure or alarm condition should result in the assumption of a deflagration risk.</u></p>

6.4 Electric Shock

Even if a battery may look to be destroyed by fire and/or other means, there is a potential that the battery still contains stranded energy and remains energized. De-energization of the system or any removal of the battery or battery component shall only be performed by a trained and competent individual with appropriate PPE.

Normal overhaul of the ESS enclosure should not be attempted by the Fire District in any circumstances, as there are considerations for handling damaged batteries requiring equipment and expertise not readily available. Once the scene is secured, these actions may be undertaken by trained experts under close supervision.

WARNING: Risk of Stranded Energy	
	<p>Always treat the batteries as Energetic Hazardous Materials, as stranded energy is likely to remain present. A Traditional Fire District overhaul should not be conducted due to the potential for stranded energy.</p>

6.5 Arc Flash

All ESS systems and related electrical equipment shall always be treated as energized (Energetic Hazardous Material).

Qualified PPE and training are required when working or accessing equipment within an Arc Flash Boundary. In general, when in direct proximity to the battery enclosure, wear a non-melting or untreated natural fiber long-sleeve shirt, long pants, safety glasses, hearing protection, and leather gloves. AR plant clothing is also acceptable. Maintain the arc flash boundary until completion of any particular task.

6.6 Lightning

Protection from direct lightning strikes. Tesla Megapack 2 XL enclosures have internal frames that act like a Faraday cage, diverting currents to flow around the internal components but not through them to ground. There are no expected significant impacts to MegaPack functionality due to direct lightning strikes. Hence, air terminations or lightning masts are not required to protect MegaPack enclosures.

Protection from Indirect Lightning Strikes. Tesla Mega Pack 2 XL is designed with adequate power electronic component sizing and creepage, in addition to monitored surge protection on the load side of the MegaPack breaker. Tests, in accordance with IEEE C62.45, demonstrate that internal circuits and components of MegaPack are protected from induced overvoltage from indirect lightning strikes. There is no expected impact on MegaPack functionality due to an indirect lightning strike.

6.7 Natural Disasters

If a tornado or similar high-wind natural disaster impacts the Tesla MegaPack 2 XL, the remote monitoring of each battery cell will detect a change in the batteries and will be shut down remotely.


If a wildfire impacts the site, the fire detection system will detect the fire and immediately contact the Fire District. If the fire impacts the batteries, the remote monitoring of each battery cell will detect a change in the battery's temperature and will be shut down remotely.


6.8 Toxic Smoke and Gas Emission

Lithium-ion batteries may release large quantities of flammable and toxic gas when undergoing failure and pose an inhalation hazard. Chemicals consumed during a thermal runaway event will produce copious amounts of smoke.

The ESS site perimeter should not be entered during a fire or off-gassing event unless there is an imminent threat to life safety, at which time only properly trained and equipped public safety personnel may enter. This entry shall be with full firefighter protective gear to include self-contained breathing apparatus (SCBA).

A fog pattern from a handline or monitor nozzle may be an effective way to control the off-gassing event on the exterior of the battery container from migrating to unwanted areas. However, if water is used in extinguishing flames, these gases can become acids, which may cause skin irritation.

WARNING: Toxic Gases	
	<p>Large quantities of toxic smoke and gas may be emitted from the ESS during battery off-gassing or fire situations.</p> <p><u>Proper PPE, including SCBA, should be worn by first responders.</u></p>

NOTICE	
	<p>A typical composition of a battery off-gassing event may include:</p> <ul style="list-style-type: none"> □ High concentrations (>10%) of Hydrogen, Carbon Monoxide, Carbon Dioxide □ Lower concentration (<10%) of Methane, Ethane, or other flammable hydrocarbons

6.9 Additional Hazards and Considerations

For additional hazards associated with leaked coolant, leaked refrigerant, leaked electrolyte, or emergency considerations during storage, operation, transportation, or first aid measures, and disposal procedures, please see the product-level Tesla Emergency Response Guide.

7 EMERGENCY RESPONSE CONSIDERATIONS

7.1 Emergency Contacts

A list of emergency contacts associated with this installation is provided on Page 3.

7.2 Equipment and Personnel Protective Equipment (PPE)

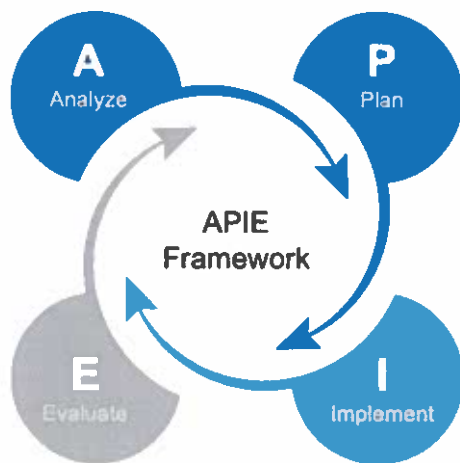
Full firefighter protective gear shall be worn in any response to a fire and/or deflagration event or if there is any indication a fire may be present or likely to be present at any time during the event.

If there is no risk of fire or deflagration present, arc-rated (AR) protective clothing to protect against arc flash and electrical shock shall be worn. Jewelry such as necklaces shall be removed to avoid contact with any electrical hazard.

Proper PPE shall include the use of Self-Contained Breathing Apparatus (SCBA).

7.3 APIE (Analyze, Plan, Implement, and Evaluate) Framework

APIE is a framework commonly used for emergency incident preparation and development of appropriate response protocol(s). The four elements of the framework are Analyze, Plan, Implement, and Evaluate. An example APIE framework with simplified sample details pertaining to an emergency incident is as follows:



Analyze: Provide signs and monitoring signals that indicate incident escalation (e.g., fire or deflagration) may take place, which first responders should be aware of

Plan: Delineate the danger zone to mitigate risk to first responders and bystanders (pedestrians, vehicular traffic, etc.)

Implement: Once a plan is developed and proper resources and equipment are installed, implement respective safety actions as deemed necessary.

Evaluate: Provide continuous monitoring and feedback of the incident and adjust accordingly to ensure the ongoing safety of any bystander or responder in the impact area.

7.4 General Emergency Response Recommendations

Initiation of emergency response shall be activated per current protocol.



Table 2 - General Emergency Response Recommendations

General Emergency Response Recommendations

1. If there is any threat or potential threat to life or safety, 911 shall be called to immediately summon the aid of public safety responders.
2. An initial scene assessment shall be conducted from all sides (360-degree scene size-up) if possible, and a clear, concise assessment shall be given to incoming responders. Hazards and facility safety concerns, such as high voltage areas or other electrical concerns, shall be announced to all responders. The scene assessment shall include the following in plain language (no code or terms):
 - Where the incident is located
 - What has happened
 - What is occurring
 - Any injuries or unaccounted-for individuals
 - What needs or other resources should be requested
3. An Incident Command System (ICS) shall be established immediately and shall include designation of roles. The primary command post location shall be located at the Fire District Staging Area at the front of the site. If Public Safety is summoned to the incident, the ICS shall be a Unified Incident Command System (UICS).
4. On-site staff (if applicable) shall immediately go to a designated muster point, which will be the command post location unless designated differently by the Incident Commander.
5. Incident Command shall designate the individual in charge of accountability. Accountability shall be reported as soon as possible. If available, another individual shall control any traffic and guide first responders to the scene.

Notes:

- At the same time as these activities are occurring, the System Owner / Operator or other designated SME shall immediately contact the Tesla 24/7 Operations Center to establish available data from the BMS and communicate this to the Incident Commander or other appropriate individual.
- It is recommended that a safe perimeter is set up and maintained around the site to keep any persons or personnel a safe distance from the incident. **A safe stand-off distance of at least 100 ft shall be maintained between individuals and the ESS enclosure(s) exhibiting fire conditions.**


WARNING: Risk of Deflagration	
	A deflagration / over-pressure event is a critical hazard, and any emergency on-site should always be addressed with full awareness of potential factors that may lead to such an event.
WARNING: Toxic Gases	
	Large quantities of toxic smoke and gas may be emitted from the ESS during battery off-gassing or fire situations. <u>Proper PPE, including SCBA, should be worn by first responders.</u>

7.5 Determine Fire Protection Approach

The general approach for this application is to take a defensive posture. Unless there is an immediate threat to life safety or a similar threat, defensive fire management is normally preferred. Entering a fenced area, other than for life safety, is only to be considered after consultation with the SME. The SME should be contacted as soon as possible, and the situation monitored from outside the facility at a safe distance.

It is not recommended to apply water to the burning enclosure. Water is not anticipated to stop a thermal runaway event and may only delay the eventual combustion of the BESS unit. Exposure protection is the focus, and the IC and SME, and/or Tesla should communicate on determining whether water application is at all necessary for adjacent exposures. The Incident Commander (IC) always maintains the discretion to apply water as deemed necessary. A fog pattern from a handline or monitor nozzle may potentially be utilized to control smoke and gases released from the affected enclosure and prevent them from migrating to unwanted areas.

In all instances, power shut down and isolation involving any high voltage feeder lines must be confirmed by the utility company before any defensive measures are taken involving application of water to the site.

WARNING: Risk of Re-ignition	
	Do NOT assume the fire is out as the fire event unfolds. A lithium-ion battery fire, which has seemingly been extinguished, may flare up again if all cells within the enclosure have not been completely consumed. The risk of battery re-ignition can remain present for hours or even days after the smoke/flame is initially detected.

7.6 Incident Monitoring and Evaluation

Continuous monitoring and feedback on the incident should be provided as the situation evolves. Consultation with the System Owner / Operator and any other required SMEs should be held to guide incident response and determine appropriate next steps.

If available, real-time BMS data from the 24/7 Tesla Operations Center should be utilized (e.g., temperature, voltage, or other critical measurements) to monitor the spread of failure and assess the health of adjacent ESS units to help guide response procedures as the event unfolds.


8 POTENTIAL INCIDENT SCENARIOS AND PROCEDURES

8.1 Overpressure Incident

Lithium-ion batteries may release flammable off-gases during thermal runaway, which, if allowed to accumulate within the enclosure, may create an explosive atmosphere, posing a serious risk to first responders and nearby exposures. Furthermore, it may be difficult to discern conditions within the enclosure if smoke and gas are not visible outside of the unit.

In case of fire or thermal runaway event, an explosive or deflagration event may occur, potentially subjecting personnel to overpressure and projectile hazards. An initial exclusion area should be established, based on the discretion of the Incident Commander, to guard against any blast overpressure. Fire District staging or operations should not be in direct alignment with the ESS units and should be established at angles relative to the sides of the enclosures if possible. If available, shielding via the built environment should be utilized to protect against high temperatures, overpressure events, or projectile hazards.

A safe stand-off distance of at least 100 ft shall be maintained between individuals and the ESS enclosure(s) exhibiting fire conditions. Staging of personnel and equipment shall be on the angles of the ESS enclosure to stay out of the potential blast radius of any enclosure doors or other possible projectiles.

WARNING: Risk of Deflagration	
	<p>A deflagration / over-pressure event is a critical hazard, and any emergency on-site should always be addressed with full awareness of potential factors that may lead to such an event.</p> <p><u>Any failure or alarm condition should result in the assumption of a deflagration risk.</u></p>

8.2 Fire Incident

Upon detection of fire or excessive heat emanating from an affected ESS enclosure by the fire detectors, an audible and visual alarm shall be signaled. Smoke and flames may be visible from the outside of the ESS enclosure. Fire growth may be slow, fast, or ultra-fast (e.g., during a deflagration event) in nature.

A safe stand-off distance shall be maintained between individuals and the ESS enclosure(s) exhibiting fire conditions. Staging of personnel and equipment shall be on the angles of the ESS enclosure to stay out of the potential blast radius of any enclosure doors or other possible projectiles. Attempt to extinguish the fire only if an imminent threat to life safety exists.

If there is no immediate threat to life safety:

1. Allow the ESS to consume itself in a controlled fashion until all fuel sources inside are depleted.
2. A defensive approach should be considered utilizing water to cool and protect adjacent exposures and mitigate the spread of fire to areas outside of the fenced installation.


Manage the fire incident utilizing the reach of the hose stream to protect exposures and control the off-gassing and smoke from the enclosure.

- Remember that even after the ESS is isolated from the electric grid, there may still be considerable stranded energy in the batteries that poses a potential electric shock hazard to anyone in the nearby vicinity.

Additionally, chemicals released during a fire or deflagration event will be in a gaseous form and primarily pose an inhalation hazard. A fog pattern from a handline or monitor nozzle may provide an effective means of controlling an off-gassing event on the exterior of the battery enclosure from migrating to unwanted areas such as safety assembly areas, emergency responders, building intakes, etc.

Hose streams may also be applied to adjacent exposures for cooling purposes based on consultation with System Owner / Operator and other required SMEs. BMS data available via the 24/7 Tesla Operations Center should be closely monitored for the adjacent system(s) for any indicators of heat impact or water damage to any adjacent ESS units and relayed to the appropriate individual within the Incident Command System.

Following partial or complete consumption of the system by fire, batteries may continue to emit flammable gases and toxic gases for an extended period of time. Continuous monitoring of gas levels in and around the incident location is recommended. Full firefighter PPE and SCBA shall be utilized until gas levels are confirmed to be at a safe level. A Firewatch shall be provided to ensure the continued safety of the site after the situation appears stable.

WARNING: Risk of Re-ignition	
	<p>Do NOT assume the fire is out as the fire event unfolds. A lithium-ion battery fire, which has seemingly been extinguished, may flare up again if all cells within the enclosure have not been completely consumed. The risk of battery re-ignition can remain present for hours or even days after the smoke/flame is initially detected.</p>

8.3 Thermal Runaway or Off-Gassing Incident





A thermal runaway incident, as described in [Section 6.1](#), is the characteristic failure mode of lithium-ion batteries. A thermal runaway event may begin suddenly, and the nature of the situation may evolve rapidly depending on a number of different factors. Combustion of flammable gases may result in fire or deflagration, and considerations in [Section 8.1](#) and [Section 8.2](#) above should be observed based on the nature of the event as it unfolds.

A thermal runaway event may result in large quantities of smoke and gas being released, which may or may not be visible outside of the ESS enclosure itself; therefore, it is critical that any failure or alarm condition result in the assumption of a deflagration or fire risk.

In the event of a thermal runaway or suspected off-gassing event, the following actions should be taken:

- Evacuate the area to a safe location located just outside the perimeter fence line.
- If the alarm system has not already signaled the Fire District, immediately call 911 to contact the 911 Dispatch Center.

3. Call any required Subject Matter Experts designated for the site
4. Call the Tesla 24/7 Network Operations Center listed on Page 3
5. Establish a safety perimeter around all sides of the ESS and remain outside the fenced area. Do not allow personnel other than firefighters in proper PPE to enter the safety perimeter and stay upwind of any smoke or off-gassing. (Note: the safety perimeter may extend beyond the boundary of the fenced area).
6. As the incident evolves, a fire or deflagration event may occur, and procedures outlined in [Section 8.1](#) and [Section 8.2](#) above should be followed based on the situation as it progresses.

WARNING: Risk of Deflagration	
	<p>A deflagration / over-pressure event is a critical hazard, and any emergency on-site should always be addressed with full awareness of potential factors that may lead to such an event.</p> <p><u>Any failure or alarm condition should result in the assumption of a deflagration risk.</u></p>
WARNING: Risk of Re-ignition	
	<p>Do NOT assume the fire is out as the fire event unfolds. A lithium-ion battery fire, which has seemingly been extinguished, may flare up again if all cells within the enclosure have not been completely consumed. The risk of battery re-ignition can remain present for hours or even days after the smoke/flame is initially detected.</p>
WARNING: Toxic Gases	
	<p>Large quantities of toxic smoke and gas may be emitted from the ESS during battery off-gassing or fire situations.</p> <p><u>Proper PPE, including SCBA, should be worn by first responders.</u></p>
NOTICE	
	<p>Indicators which may provide insight into what is happening or about to happen during an incident may include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Smoke or flames <input type="checkbox"/> Change in smoke color <input type="checkbox"/> Change in velocity or volume of smoke production <input type="checkbox"/> Sounds – popping and/or hissing <input type="checkbox"/> Smell – sweet smell

8.4 Alarm Incident

In the event of an alarm activation, the following actions should be taken:

1. Evacuate the area to a safe location, a sufficient distance from the troubled enclosure
2. If the alarm system has not already signaled the Fire District, immediately call 911 to contact the 911 Dispatch Center.

3. Call any required Subject Matter Experts designated for the site
4. Call the Tesla 24/7 Network Operations Center listed on Page 3
5. Establish a safety perimeter around all sides of the ESS and remain outside the fenced area. Do not allow personnel other than firefighters in proper PPE to enter the safety perimeter and stay upwind of any smoke or off-gassing. (Note: the safety perimeter may extend beyond the boundary of the fenced area).

8.5 External Fire / Thermal Exposure Incident

For any type of external heat source or fire impingement (i.e., not stemming from the battery system itself), the Incident Commander should be advised to look at the state of health information from the BMS data (e.g., increasing temperature in target ESS units) available from the 24/7 Tesla Operations Center to evaluate severity of the incident and treat as an ESS emergency. All precautions previously noted for fire and deflagration incidents should be observed.

8.6 External Impact Incident

In the event that an enclosure is severely impacted, causing crushing or puncturing of the outer shell of the enclosure, treat this as an emergency - notify 911 and other required parties.

8.7 Natural Disaster Impact

In the event that an enclosure is severely impacted by a natural disaster, treat this as an emergency - notify 911 and other required parties.

9 POST INCIDENT / HANDOFF PROCEDURES

9.1 Handoff Procedures

When an energy storage site is deemed safe, upon determination by the Incident Commander (IC), the Subject Matter Expert (SME)/Fire Remediation Personnel, if not immediately present, shall be called out to ensure that the site is safeguarded until the damaged system is removed, repaired, or replaced based on the approved Decommissioning Plan filed with this installation.

9.2 Activation of the Decommissioning Plan

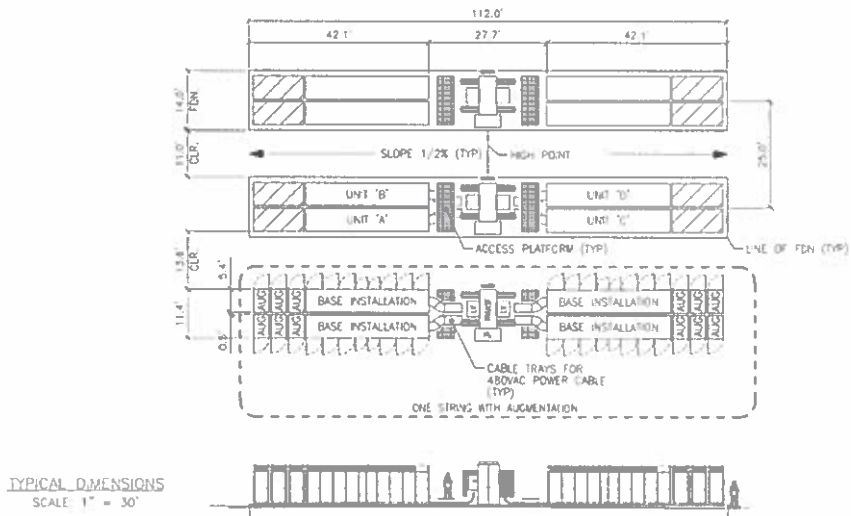
Decommissioning of the system shall take place in accordance with the approved Decommissioning Plan filed with this installation. Deactivation, de-energizing, dismantling, and removal of the system shall be conducted by trained and knowledgeable persons in accordance with the manufacturer's specifications.

APPENDICES

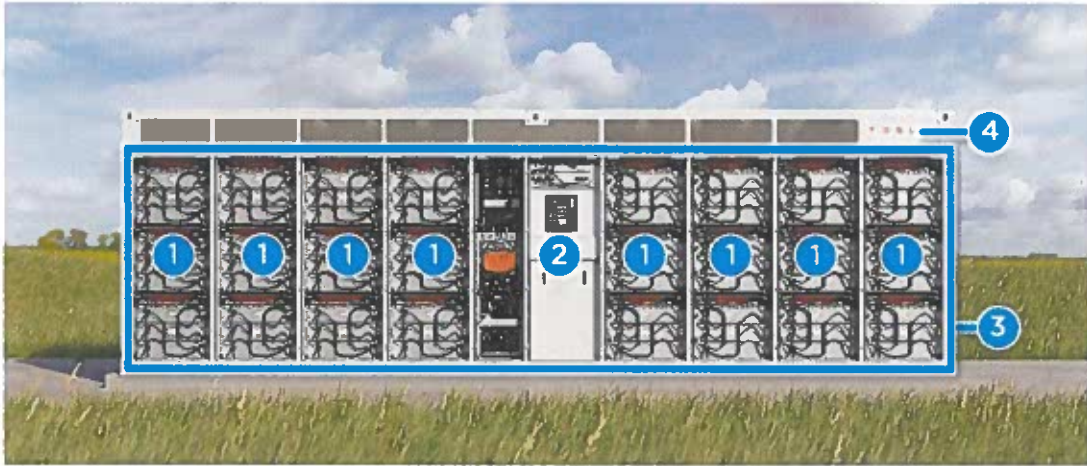
APPENDIX A – Additional Site Photos and Maps Appendix A.1 Site Map



Appendix A.2 Typical Dimensions



Appendix A.3 Tesla MegaPack 2 - Inside View

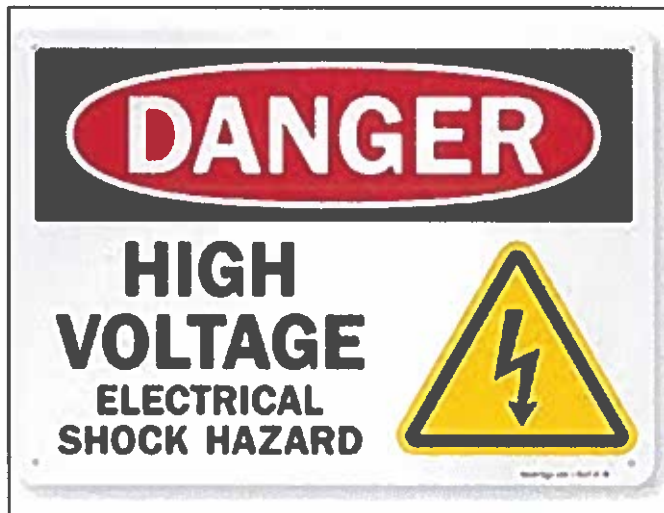


1. Battery modules with active and passive fuses – externally serviceable
2. Touch-safe Customer Interface Bay
3. Non-walk-in IP66 enclosure and deflagration mitigation
4. Thermal roof with overpressure vents

APPENDIX B – Signage / Placarding / IO Matrix

 **ENERGY STORAGE SYSTEMS** 

TYPE OF TECHNOLOGY
SPECIAL HAZARDS
EMERGENCY NUMBER
SUPPRESSION SYSTEM





Community Notification System

FIRE OR EMERGENCY EVENT

Fire Alarm Monitoring System will simultaneously alert:

- 24/7 remote operations center
- 911 and Emergency Management
- Facility Owner/Operator

Emergency Management notifies community

NON-FIRE EVENT, UNPLANNED MAINTENANCE

In case of abnormal battery operating conditions, Battery Management System (BMS) notifies:

- 24/7 Remote Operations Center
 - Installation Owner/Operator
- Emergency Management would be notified if:
- Operator response results in increased activity at the site (greater than 10 light duty trucks or larger equipment)
 - Emergency response is requested

Emergency Management evaluates and notifies community at discretion

PLANNED MAINTENANCE

Emergency Management would be notified if:

- Operator plans maintenance work that results in increased or unusual activity at the site (greater than 10 light duty trucks or larger equipment)