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COFFMAN ENGINEERS



VACA DIXON AND ARGES POWER CENTER PROJECT

Emergency Response Plan (ERP)

COFFMAN PROJECT NO. 251796

IFP SUBMITTAL

October 28, 2026

Prepared for: Vaca Dixon BESS LLC and Arges BESS LLC

EMERGENCY RESPONSE PLAN

FOR

Vaca Dixon Power Center Project

Vacaville, California

Project Number: 251796

Revision	Date	Description
0	12/30/2025	Issued for Permit
1	10/09/2026	Change in BESS Technology

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IN THE EVENT OF A FIRE OR THERMAL RUNAWAY, FIRST CALL 911

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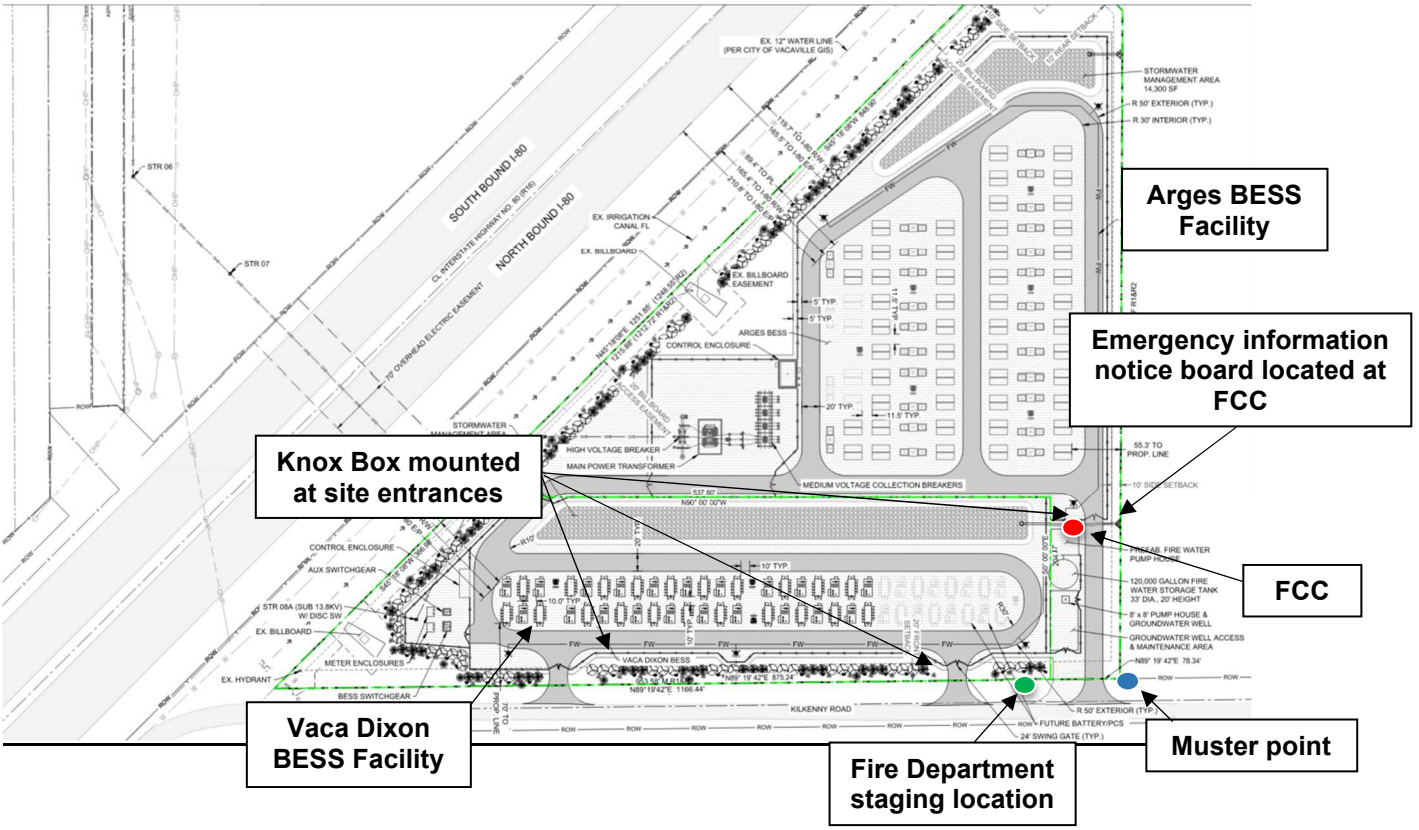
ABBREVIATIONS

AED	Automated External Defibrillator
AHJ	Authorities Having Jurisdiction
BESS	Battery Energy Storage System
BMS	Battery Management System
BOL	Beginning of Life
BOP	Balance of Plant
CFC	California Fire Code
EMS	Energy Management System
EOL	End of Life
ERP	Emergency Response Plan
ESS	Energy Storage System
FACP	Fire Alarm Control Panel
FCC	Fire Command Center
FM	Factory Mutual
LFP	Lithium Iron Phosphate
LPC	Local Plant Controller
MW	Megawatt
MWh	Megawatt-hour
NEC	National Electric Code
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
O&M	Operations & Maintenance
PCS	Power Conversion System
PG&E	Pacific Gas and Electric Company
PPE	Personal Protective Equipment
ROC	Remote Operation Center
SCADA	Supervisory Control and Data Acquisition
SCBA	Self-Contained Breathing Apparatus
SME	Subject Matter Expert
SOC	State of Charge
UPS	Uninterruptible Power Supply

1 QUICK REFERENCE GUIDE

UNMANNED ESS FACILITY WITH REMOTE MONITORING

Staging Map



1. Key Site Information
   - Address: Kilkenny Road, City of Vacaville, Solano County, CA, 95377
   - Coordinates: 38°23'43.0"N 121°55'15.7"W
   - Total Capacity: Vaca Dixon: 57 MW/ 57MWh / Arges: 100 MW/ 400MWh
   - Number of Enclosures at Beginning of Life (BOL): Vaca Dixon 21, Arges 100
   - Number of Enclosures at End of Life (EOL): Vaca Dixon 29, Arges 108
   - Battery Chemistry: Lithium Iron Phosphate (LFP)

2. Abnormal Conditions - Page 18
   - Evacuate the area around the effected equipment
   - Report to the muster point and take head count

3. Emergency Contact List / Procedure – Page 11
   - For ANY emergency, call the Remote Operations Center (ROC) immediately
   - Tracy ROC emergency number: 209-836-9987
   - Tracy ROC responsibilities:
     - Alert Pacific Gas and Electric Company (PG&E) if not already notified
     - Call emergency responders if necessary

    - Call CATL and AESC technical support
    - Arrange for on-site personnel if needed
- Coordinate with Balance of Plant (BOP) provider for emergency response

4. Staging and Approach – Page 17 - 19
    - Stage at least 75 ft away from battery enclosures
    - Contact ROC for site entry consent and updates
    - Enter through the gate with Knox box access
    - Locate the Fire Command Center (FCC) just inside the main entrance

5. Hazard Assessment – Page 18 - 19
    - Check FCC display for enclosures in alarm
    - Assume toxic and flammable gases are present
    - Wear full PPE with SCBA and monitor for gases as required
    - Maintain 75 ft distance as explosive conditions could exist

6. Suppression Tactics – Page 19 - 20
    - Avoid direct suppression unless a life threat exists
    - Use water spray on adjacent structures to prevent spread
    - Apply water with a fog nozzle if deemed safe by the Incident Commander
    - Note: Foams, dry chemicals, and CO_2 are not effective

7. Enclosure Assessment – Page 23
    - Monitor BMS and FACP for internal conditions
    - Air monitor while approaching if approved by Incident Commander
    - Stay 75 ft clear if BMS/FACP is down and there is no ventilation
    - Possible explosive atmosphere even with ventilation
    - Continue monitoring for 24-48 hours post-event

8. Post-Fire Procedures – Page 15
    - Monitor nearby enclosures with detectors and BMS
    - Isolate unstable batteries until safe to decommission follow CATL and AESC recommendations
    - Maintain 75 ft exclusion zone after deflagration
    - Watch for toxic/flammable gases, re-ignition, and debris

2 INTRODUCTION

2.1 Purpose

This Emergency Response Plan (ERP) is provided by Coffman Engineers, Inc. (Coffman) for the Vaca Dixion Power Center Project, consisting of the Arges BESS facility and the Vaca Dixon BESS facility, located in the City of Vacaville, California. The following emergency response procedures are provided so that all fire service personnel understand the practices that are to be followed to prepare for and to provide immediate and effective responses to emergencies that may arise at the facility. The Energy Storage System (ESS) conditions will be remotely monitored by the Tracy Remote Operations Center (Operator), and service technicians will be on site periodically to maintain the enclosures. While this document is primarily intended for emergency responses to an operational BESS site, Appendix I has been included for emergency response considerations during the construction phase.

This ERP for the Vaca Dixon Power Center has been prepared for Vaca Dixon BESS LLC and Arges BESS LLC and is being submitted to the California Energy Commission (CEC) for review and approval. The CEC is the entity responsible for licensing the Vaca Dixon BESS and Arges BESS facilities including review (in consultation with the Vacaville Fire Department) and approval of fire-related plans and design related to the BESS facilities. The Vacaville Fire Department is the Fire Marshal and is considered the AHJ for the purposes of Fire and Life Safety matters (e.g., emergency response planning and incident response). The life safety of personnel shall be the highest priority during any event.

2.2 Limitations

This plan does not imply, nor shall readers infer, that implementation of this plan will guarantee a perfect response will be practical or possible. No plan can shield individuals from all events.

Responders will attempt to coordinate the plan and response according to all applicable laws and standards.

Response to emergencies, events, or disasters shall only be undertaken to the level of the responders' training, Personal Protective Equipment (PPE), and resources available. There may be little to no warning to implement operational procedures during specific events.

The success or failure of all emergency plans depends upon effective training, continual (e.g., annual) review of this response plan, and execution of the response. Sites and operators shall comply with applicable codes, standards, and other requirements as appropriate locally, even if those codes, standards, and requirements contradict this plan.

Successful implementation of this plan depends on the timely identification of capabilities, available resources at the time of the incident, and a thorough information exchange between responding organizations and the facility or transporter.

This plan is unique and applicable to this specific site and equipment. It is not to be duplicated or used at any other site regardless of any assumed similarities between sites and equipment.

2.3 Facility Description

The Vaca Dixon Power Center Project, consisting of the Arges BESS facility (100MW/400MWh) and the Vaca Dixon BESS facility (57MW/57MWh), is located on a 10-acre parcel (APN 0133-060-060). The project is located within Solano County, Kilkenny Rd, Vacaville, CA 95377 with coordinates 38°23'46.4"N 121°55'17.3"W.

Project Summary	
Engineering, Procurement and Construction	WSP
Owner	Vaca Dixon BESS LLC and Arges BESS LLC
Utility	Pacific Gas and Electric Company (PG&E)
Vaca Dixon BESS	
BESS Enclosure Type	Enclosure Type IP-55 CATL CP1
Number of ESS Enclosures	21 BOL (29 EOL)
Total Site Footprint	4.25 acres
Capacity	57 MW / 57 MWh
Arges BESS	
BESS Enclosure Type	Enclosure Type IP-55 AESC HE-L5030A
Number of ESS Enclosures	100 BOL (108 EOL)
Total Site Footprint	5.75 acres
Capacity	100 MW / 400 MWh

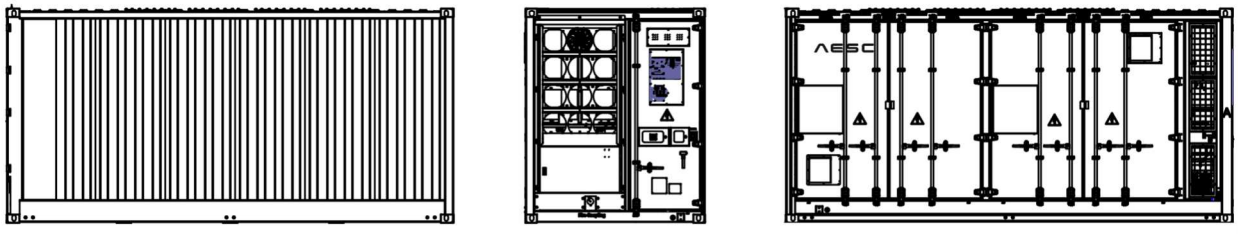


Figure 2.3A – AESC HE-L5030A Overview.

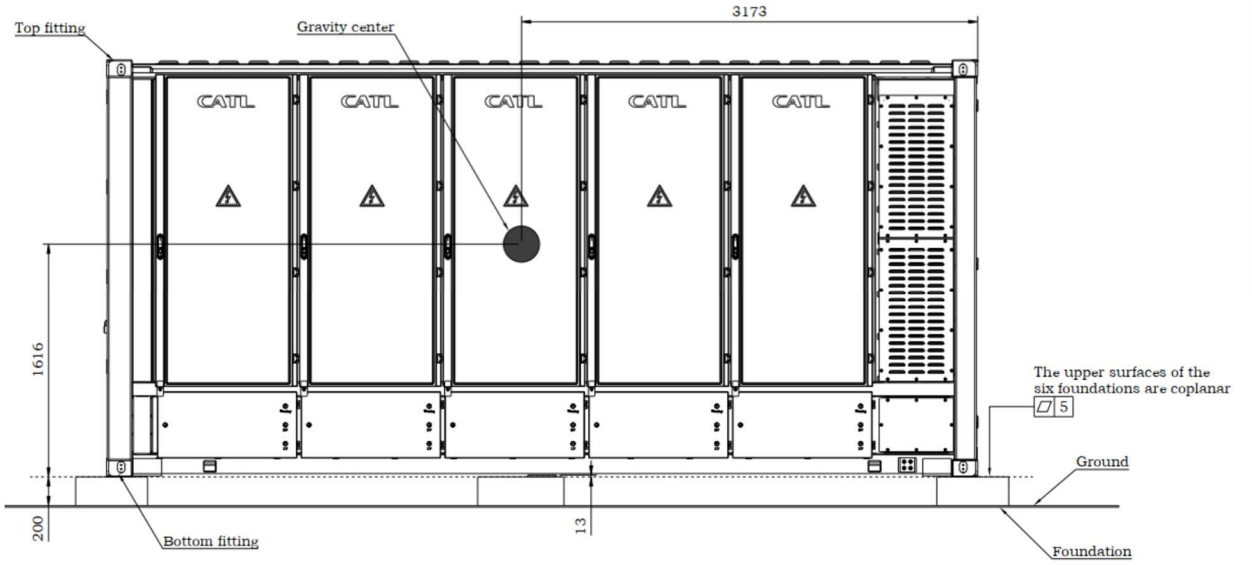


Figure 2.3B – CATL CP1 Overview.

The project will utilize AESC HE-L5030A energy storage system (ESS) enclosures, an on-site project substation, and associated on-site support facilities including inverters, collection lines, fencing, access roads, SCADA, and other ancillary equipment.

Below is a vicinity map (Figure 2.3.1) and a simplified map of the facility (Figure 2.3.2).

A Fire Command Center (FCC) will be provided to monitor both BESS facilities and is located off of Kilkenny Road in between the site access points for both Arges BESS facility and Vaca Dixon BESS facility and near the first responder staging area. It will contain enclosures with power outlets, fire alarm indicator panel, floor and site plans, and printed copies of the ERP, safety data sheets, and any additional information deemed necessary by the Pre-incident planning sessions.



Figure 2.3.1 –Vaca Dixon and Arges Power Center BESS Vicinity Map (North ↑)

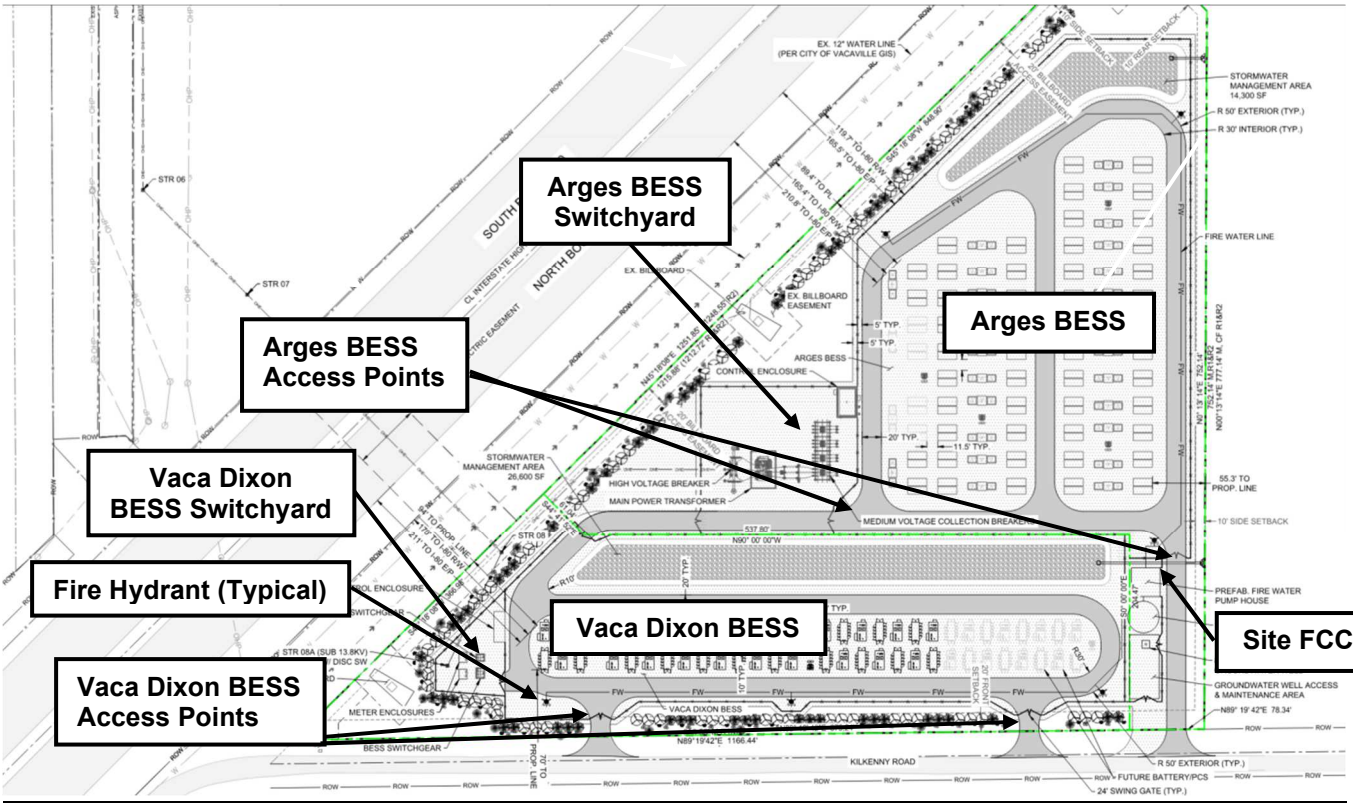


Figure 2.3.2 – Vaca Dixon and Arges Power Center BESS Fire Hydrant Layout. (North ↑)

2.4 Plan Review and Revision

A review of this ERP shall be conducted and documented at a minimum on an annual basis. The plan shall be reviewed and amended whenever there is a:

- Change in facility design, construction, operation, or maintenance that affects emergency response planning
- When outside resources are changed or modified
- Change in ERP members
- Updated documentation from CATL and AESC
- Changes in the City of Vacaville Fire Departments response plans.

The plan shall be reviewed and updated to reflect the changes that may affect this ERP when they occur and shall not be delayed until the annual review. This would include, but not be limited to, updating emergency contact information within Section 3.3.

2.5 Applicable Codes and Standards

The applicable codes with regards to fire protection and life safety, with local amendments, are listed below.

- CFC, California Fire Code, (2025 Edition), as adopted by the City of Vacaville
- NFPA 72, National Fire Alarm and Signaling Code (2022 Edition)
- NFPA 70, National Electrical Code (NEC) (2020 Edition)
- NFPA 855, Standard for the Installation of Stationary Energy Storage Systems (2023 Edition)
- UL 9540, Standard for Energy Storage Systems and Equipment (2020 Edition)
- UL 9540A, Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems (2019 Edition)

The following standards, not adopted by the CFC, are used as guidance:

- NFPA 855, Standard for the Installation of Stationary Energy Storage Systems (2026 Edition)
- Pre-incident planning per NFPA 1620, Standard for Pre-incident Planning (2020 Edition)

The referenced editions exceed the requirements of the existing guides and standards referenced in the 2025 CFC.

3 EMERGENCY RESPONSE MANAGEMENT

3.1 Overall Organization

Overall responsibility for this ERP lies with the Vaca Dixon Power Center Project Site Emergency Response Coordinator. The Emergency Response Coordinator, or their designee, is responsible for program implementation, including designating evacuation routes and employee assembly points, coordinating severe weather activities, communicating emergency response procedures to site personnel, contracting with emergency response organizations, and contractor coordination.

3.2 Roles and Responsibilities

Specific management personnel will assume leadership roles for emergency responses. Note that some of these responsibilities may be combined within the duties of single individuals. The following roles and responsibilities are defined herein and are referenced throughout the ERP.

All facility personnel have a responsibility to immediately report emergencies to the Lead Technician on duty or local emergency responder personnel when appropriate. There shall be no delay in reporting emergency events that require the local emergency responders. The Lead Technician will then notify the Emergency Response Coordinator and other key personnel of the situation using the Vaca Dixon Power Center BESS emergency notification telephone list below.

Company Regional Manager: A Company Regional Manager is an individual not directly responsible for the day-to-day operation of the site, nor for the immediate response during or immediately after an emergency, but who does bear responsibility for post-event assessment and broader planning, recovery, and learning from experience. The Regional Manager will typically be responsible for ensuring incident records are maintained. Such a manager shall ensure that O&M Managers are providing safety training and that a safety-based culture is part of core operations across sites.

Emergency Response Contractor: An Emergency Response Contractor is an outside organization or individual who is contracted to undertake certain aspects of emergency response but is not otherwise responsible for the strategic coordination of response, nor is it part of the typical operation of a site. Care shall be taken that such contractors understand the broader picture of site safety and are aware of more comprehensive emergency response protocols (such as, but not limited to, the breadth of topics covered in this plan).

Emergency Response Coordinator: The Emergency Response Coordinator takes control of the emergency and any resources necessary until the emergency has been eliminated and the essential cleanup and restoration operations are complete. This person shall lead the incident reporting. The Emergency Response Coordinator is typically the O&M Manager; in her/his absence, the Lead Technician or other designated person shall assume this role. All personnel on-site shall know who the Emergency Response Coordinator on duty is during their time on site. Remote operators shall likewise know who the Emergency Response Coordinator is for any given shift.

The Emergency Coordinator or a designee will be responsible for notifying the appropriate regulatory agencies and, if necessary, the Emergency Response Contractor or mutual aid groups. A list of emergency contacts and agencies that may be notified in the event of an

emergency is provided in this ERP. The incident will be documented and kept on file.

The Emergency Response Coordinator is also responsible for seeing that this plan is implemented and will appoint an adequate number of personnel to enforce the plan, ensure everyone is familiar with this plan, and act as a liaison with the local Fire Department(s).

The Emergency Response Coordinator will direct the following activities during an emergency:

1. Oversee the safety of all personnel.
2. Evaluate if operations in the affected area shall be shut down.
3. Take precautions to prevent or limit the spread of fire or explosions.
4. Isolate the affected area and provide directions for radio announcements.
5. Determine the source/cause of the emergency and evaluate the primary and secondary hazards to allow a full-scale, safe response.
6. Ensure that appropriate internal and external notifications are made.
7. Coordinate outside assistance from public or private organizations.
8. Implement other appropriate response provisions as necessary.
9. Determine evacuation routes for workers during an emergency.

The Emergency Response Coordinator shall be accredited in accordance with NFPA 70/70E and the National Electric Safety Code (NESC). If they are not, someone who is (e.g., the O&M Manager) must be present in emergencies to interface with electrical equipment above 50 volts.

Incident Commander: The Incident Commander is the on-scene ranking officer representing the fire department agency with incident jurisdiction. The Incident Commander authorizes incident objectives and strategies that collectively delineate a course of action. Incident Commander role shall not be designated to civilian organizations or owner operators.

O&M Manager: The Operations and Maintenance (O&M) Manager is the individual responsible for the normal operation and upkeep of the energy storage system on a day-to-day basis. This includes standard operating conditions and routine scheduled or responsive maintenance activities.

Lead Technician: A Lead Technician is an on- or off-site individual responsible for the operation of a site from a performance and technical perspective. Such responsibilities may lie with the O&M Manager or with a remote operator.

Site Manager: A Site Manager supervises the personnel for a site. The Site Manager is ultimately responsible for the implementation of the company's written procedures and practices.

Subject Matter Expert (SME): An individual and designated secondary contact with detailed working knowledge of the energy storage system and incident command systems. The Subject Matter Expert (SME) shall have ready access to information on the state of the system, status and meaning of alarms, etc. The SME's contact information must be available to the Emergency Response Coordinator and first responders, as well as others, via information on the emergency information notice board.

3.3 Emergency Contact Information

Contact	Address	Telephone Number
Emergency Fire/Police/Ambulance	N/A	911
Medical Center Kaiser Permanente Vacaville	1 Quality Dr, Vacaville, CA 95688	Non-Emergency 707-624-4000
Gen-Tie Issues Pacific Gas and Electric (PG&E)	5221 Quinn Rd, Vacaville, CA 95688	(+1)707-448-2860
I-80 Crossing Issues Caltrans District 4	111 Grand Ave #300, Oakland, CA 94612	(+1)510-286-4444

Emergency Call Centers	Telephone Number
Tracy Remote Operations Center (ROC) – Primary	209-836-9987
Tracy Remote Operations Center (ROC) – Secondary	209-836-1605
Tracy Remote Operations Center (ROC) – Manager	225-382-4421
CATL Energy Technical Support	248-289-6200
AESC Energy Technical Support	615-751-3539

Emergency Services & Contractors	Telephone Number
California Governor's Office of Emergency Services (Cal OES)	916-845-8200
UC Davis Firefighters Burn Institute in Sacramento	916-734-7010
U.S. Pipeline & Hazardous Material Safety Administration help line	1-800-467-4922

3.4 ERP Summary Tactical Actions

The following summary actions are provided for storage and during operation:

- In case of an abnormal condition including:
  - Suspicious odor observed near the equipment,
  - Smoke or fire emanating from the equipment,
  - Severe physical impact to the equipment,
  - An operational condition that is not consistent with normal operation.
- DO NOT APPROACH the ESS enclosure if an abnormal condition is suspected.
- Contact CATL and AESC Site Personnel or CATL and AESC Customer Support and describe the situation.
- The following immediate actions are recommended:
  - EVACUATE THE AREA AROUND THE EQUIPMENT
  - Notify the appropriate personnel which could include Site Operator, CATL, AESC, First Responders, Police, or the Utility.
  - Follow the CATL and AESC recommendations for shutting down or isolating the equipment.
  - Follow the instructions of CATL and AESC.
- DO NOT APPROACH THE ENCLOSURE UNTIL AHJ PROVIDES AN ALL CLEAR.
- Maintain the recommended minimum approach distances during the event:
  - First Responders and Firefighters – 75 feet is recommended in NFPA 855. Final determination to be made during the event, based on established field conditions.

3.5 Pre-Incident Planning

Pre-planning for emergencies is a crucial element of this plan. The following steps shall be taken in planning for emergencies at the site:

- The fire department and other first responders must receive a copy of this plan and participate in an on-site familiarization meeting.
- All emergency responder access points to the facility shall be identified.
- An emergency response information notice board must be maintained at a location readily visible and accessible to all personnel, identified in Appendix A, and contain key contacts for emergencies, a list of personnel certified in First Aid/CPR, and other notices as outlined in this document or as deemed appropriate by the Emergency Response Coordinator. Provision shall be made for non-English speaking workers on site.
- All road exits shall be established and posted on the emergency information notice board.
- An evacuation muster point diagram must be documented and posted on the emergency information notice board.
- Logs of on-site personnel for tracking headcounts during emergencies shall be maintained.
- All enclosures and property surrounded by fencing must be marked by signage that identifies specific hazards, as required by code.

- Site personnel must receive instruction to keep exits from the site clear.
- Safe approach distances must be established for equipment's different failure modes, personnel must be trained in these distances, and such information must be communicated in writing to first responders during drills and other emergency response informational meetings. A safe distance of 75 feet from an enclosure is required wherever explosive conditions may be present, as further discussed in section 4.1.6 below.
- Safety Data Sheets provided by manufacturers shall, where relevant, be provided to first responders.
- Audible and visual (e.g., flashing lights) alarm systems shall be established that reflect specific on-site hazard analyses. Personnel shall be trained on the significance of different alarms and the corresponding actions. Descriptions of each alarm and corresponding actions shall be clearly posted on an emergency information notice board (location marked on the map in Appendix A).
- Complete periodic on-site training programs to identify emergency risks and protocols to follow in an emergency event.
- Review of OSHA requirements contained in 29 CFR 1910.38

3.6 Emergency Routes & Procedures

A Vaca Dixon Power Center site evacuation sheet shall be posted and employees shall be trained to know the exit location and be familiar with the muster point posted in the area indicated on the site map (Appendix B).

Depending upon the degree of emergency, weather, and site conditions, roadways, as designated on the site map (Appendix B), will be used for routes of evacuation.

In the event of an evacuation, all personnel will meet at the designated muster point, as shown in Appendix B, for further information. If the primary muster point is inaccessible or hazardous, personnel shall establish a secondary muster point and announce its location via radios and telephones as available and inform the emergency coordinator (if not present) by radio or phone. Employees shall then immediately contact their supervisor for further instructions.

When notified to evacuate, site personnel shall do so in a calm and orderly fashion, keeping the following instructions in mind:

- Walk, don’t run. Help others who need assistance as long as doing so does not put you at greater risk.
- Stay upwind, upstream, and uphill whenever possible.
- Watch for other traffic and equipment on access roads and roadways.
- Be aware of ice/snow and loose gravel conditions.
- Drive safely.

Any person with a disability (mobility, hearing, sight, etc.) who requires assistance to evacuate is responsible for prearranging with someone in their immediate work area to assist them in the event of an emergency. Anyone knowing of a person with a disability or injury who was not able to evacuate will report this fact immediately to their supervisor. This information shall be

communicated to emergency responders immediately upon their arrival if the disabled person has not been evacuated.

Once an evacuation is complete, the Emergency Response Coordinator or Lead Technician shall account for all personnel. This accountability information shall be communicated to the emergency responders immediately upon their arrival. When a person is unaccounted for, the following information shall be communicated to the emergency responders:

- Name of the individual
- Disabled or not disabled
- Work location
- Last known location

Responder access points shall be kept unobstructed so first responders will be able to continue their operations when responding to emergencies within the site.

3.7 Communications

Timely and efficient communications are essential to deal with an emergency response situation. The Emergency Response Coordinator is the central point of contact for all involved in an emergency response, including first responders and Subject Matter Experts (SMEs). The following processes shall be observed during emergency communications:

- Employees using radios/phones shall yield to individuals who are the most directly involved in an emergency response activity, i.e., emergency response takes priority over all other communication on the company network.
- Emergency transmissions shall be clearly announced using signal words such as ‘urgent’ or ‘mayday.’ These signal words give priority to the radio transmitter to proceed with their message.
- If emergency radio/phone communications are interrupted or unclear, employees shall proceed to the muster point identified in Appendix B.
- All hand-held radios/phones shall be recharged daily with backup batteries ready for use.
- Radios shall be inspected daily for functionality, and a radio check shall be transmitted to confirm that both the transmission and receiving functions work. If a radio is not working properly, then the employee shall notify the lead technician and make arrangements for some other form of communication while working. Radios that are not working properly shall be placed out of service and labeled appropriately so they will not be used by another employee.
- Provision shall be made for non-English speaking workers on site.

3.8 Personal Protective Equipment

Full firefighter protective gear shall be worn in any response to a fire or explosion event or if there is any indication that a fire or thermal runaway may be present. This shall include but not be limited to proper turnout gear (coat, pants, boots, and gloves), helmet, fire hood, and a Self-Contained Breathing Apparatus (SCBA). All NFPA compliant PPE equipment shall be worn in accordance with local fire department policy.

3.9 Emergency Response Operations

Any firefighting or rescue operations shall be performed by trained professionals upon their arrival. An Incident Commander shall be identified, and they will coordinate smoke and fire boundaries as well as Hot, Warm, and Cold zones for the scene as required. No employee is required or permitted to place themself in harm's way in order to facilitate extinguishment, evacuation, or rescue.

3.10 Post Emergency Fire Department Procedures

The Incident Commander, in consultation with the O&M Manager, SME, and fire department, shall make the final determination regarding when the scene is safe for release. The Incident Commander shall decide when it is appropriate to remove the fire and smoke scene boundaries and safety zones. In some circumstances, the scene may need to be safeguarded for investigators to examine the event's failures. If the event was caused by a criminal act, the O&M manager should be guided by law enforcement for direction.

3.11 Post-Emergency Incident Reporting Procedures

Following any emergency described in this plan and in compliance with facility permits and other County and State requirements, an incident report must be prepared by the Emergency Response Coordinator and transmitted to the appropriate individuals and agencies after review by the Company Regional Manager.

The Emergency Response Coordinator shall compile all documentation and perform a post-emergency investigation. Immediate performance of this activity will aid in determining the exact circumstances and cause of the incident. Issues to be resolved include:

- Causes of the incident.
- Effectiveness of the emergency response plan.
- Need for amendments to the response plan.
- Need for additional training programs.

4 FIRE OR THERMAL RUNAWAY INCIDENTS

4.1 Conditions Associated with Lithium-Ion Battery Storage

Electrical, vehicle, or other fires not directly involving Lithium-ion batteries shall be managed and controlled using typical firefighting and response efforts. In addition, efforts shall be made to limit fire and heat impacts to the battery storage enclosures.

Lithium-ion battery storage systems present a unique challenge for firefighters.

A battery energy storage system does not have a single point of disconnect. Disconnects will de-energize select parts of the system; however, batteries will remain energized. Stranded electrical energy in fire-damaged storage batteries and other ESS has the potential for reignition long after initial extinguishment.

Proper response to electrochemical ESS thermal runaway is automated within the enclosure, but additional site actions may be required for control or for other fires and may include the following procedures and steps:

- System isolation and shutdown
- Hazard confinement
- Fire suppression

The following hazards may be encountered when fighting fires in lithium-ion battery energy storage systems:

- Electrical enclosures and batteries may not allow water intrusion from the high-pressure stream of a fire hose.
- Shock hazard due to direct contact with energized components.
- Smoke and toxic gases
- Thermal runaway
- Explosion hazard

While the site fire alarm system utilizes an offsite 24/7 monitoring station that will alert the fire department in case of emergency, the exact conditions of each monitoring point on the fire alarm system will only be viewable at the Fire Command Center (FCC) located off of Kilkenny Road at the southeast portion of the facility near the entrances points to both battery energy storage facilities. This will allow the responding fire department to know which enclosure (s) is/are in alarm.

4.1.1 Thermal Runaway

Fires in electrochemical ESS are often a result of a process called thermal runaway, which results in a dynamic temperature increase. Initial signs of thermal runaway include pressure increase at the cell level, temperature increase, and off-gassing. As the process continues, additional signs might include vent gas ignition, exploding cells, projectile release, heat propagation, and flame propagation. As the failure cascades, responders shall also be prepared

for toxic and potentially explosive gas release. Responders shall treat them as highly dangerous and use their entire suite of PPE and breathing apparatus when responding.
Thermal runaway can be detected by monitoring temperature and gas levels in and around a battery. The Battery Management System (BMS) monitors battery cell temperature, voltage, current, and dry contact switching value in real time but is external to the fire alarm system. Sensors within the battery enclosures monitor the batteries for high temperatures, smoke, and for toxic and flammable off-gassing. The activation of the gas, smoke, or heat sensors indicates the high probability of a thermal runaway. It sends an alarm signal to the associated FACP and subsequently to the site FCC and the remote monitoring center. Each FACP has a display that will show alarms from its local ESS group. The FCC display will show alarms from the entire site.

Rescue personnel shall keep their distance unless actively rescuing a person if batteries are in a thermal runaway condition.

The ESS enclosures are under the control of a site Energy Management System (EMS) or Local Plant Controller (LPC), which in turn communicates with an off-site fleet controller, SCADA operations center, or other third-party dispatch and monitoring entity. The ESS enclosure alarms will be forwarded to the remote operations, and remote operations or staff personnel on the site can shut down the ESS enclosure(s) remotely if determined necessary.

Note that a system shutdown will not de-energize the battery bank or guarantee that a fault or thermal runaway event has been stopped. Responders and staff shall not approach the ESS enclosure or attempt to open the ESS enclosure until deemed safe.

On-site personnel witnessing an emergency shall not assume that automated alarms have reached the Local Plant Controller or Emergency Management System or that such alarms have been passed on to remote operations. Such personnel are advised to call 911 and contact remote operations directly, in addition to other key stakeholders described herein.

4.1.2 Non-Firefighter Response to Fire Event

In the event of a pre-alarm incipient stage (beginning, small) fire where audible and visual alarms may not be activated, employees shall notify adjacent individuals of this situation and exit the area. Signs of a fire may include:

- Acrid burning smell – sweets smells (e.g., Juicyfruit) or solvent smells (e.g., nail polish have been commonly reported)
- Excessively hot access door handles or outer surfaces
- Unusual sounds indicating electrical arcing or combusting materials – (e.g., hissing and popping)
- Smoke emanating from the battery enclosure
- Other abnormal events

In the event of a more significant fire that has triggered audible or visual fire alarms, employees shall still notify adjacent individuals of this situation and exit the area.

Contractors, maintenance staff, or visitors shall immediately exit the area upon notification of an emergency condition and proceed to the designated muster point. Only employees trained in the use of fire extinguishers or other manual fire suppression systems shall attempt to use them. Employees are not expected or authorized to respond to fires beyond the incipient stage. The fire department shall be immediately notified by dialing 911 when any unintended fire has taken place. Site management shall also be immediately notified of any emergency.

For a fire, uncontrolled heating, or off-gassing event occurring related to a Battery Enclosure:

1. Evacuate the ESS enclosure area immediately
2. Call 911
    a. Site Name: Vaca Dixon Power Center BESS
    b. Address: Kilkenny Road, City of Vacaville, Solano County, CA, 95377 with coordinates 38°23'43.0"N 121°55'15.7"W
3. Make sure the immediate area of the fire is clear of personnel.
4. Account for all employees, contractors, and visitors who were working in the immediate area of the fire. If any personnel are unaccounted for from the immediate fire area, issue a communication throughout the facility to attempt to locate the person(s) missing.
5. Contact the O&M Manager and Emergency Response Coordinator immediately.
6. Remove obstructions that might impede response to the scene.
7. Station available personnel at road intersections to stop traffic flow into the fire scene.
8. Proceed to the designated muster point for a headcount. If on-site, the Emergency Response Coordinator will do the headcount and relay information/instructions.
9. If encountering heavy smoke, stay low and breathe through a handkerchief or other fabric. Move away from the area.
10. Assist anyone needing help leaving the area so long as doing so does not put the assistor at additional risk.
11. Do not leave the designated muster point until advised to do so. If risk requires evacuation of the muster point, a secondary muster point must be established, and that fact must be announced via radios and alarms as available. The secondary muster point shall be outside the property boundary and at least 75 ft away from ESS enclosures.
12. The Emergency Response Coordinator will issue an “all clear” only when the fire department informs them that it is safe to do so.
13. The ESS enclosure is not to be accessed until the O&M Manager or designated Emergency Response Coordinator gives authorization.

The ESS enclosures are under the control of a site Emergency Management System (EMS) or Local Plant Controller (LPC), which in turn communicates with an offsite fleet controller, SCADA operations center, or other third-party dispatch and monitoring entity. The ESS enclosure alarms will be forwarded to the remote operations and remote operations, or staff personnel on the site, can shut down the ESS enclosure(s) remotely if determined necessary. Note that a system shutdown will not de-energize the battery bank or guarantee that a fault or thermal runaway

event has been stopped. Nobody shall approach the ESS enclosure or attempt to open the ESS enclosure until deemed safe.

On-site personnel witnessing an emergency shall not assume that automated alarms have reached the Local Plant Controller or Emergency Management System or that such alarms have been passed on to remote operations. Such personnel, in addition to other critical stakeholders described herein, are advised to call 911 and contact remote operations directly.

4.1.3 Firefighter Response to Fire Event

Considerations for firefighter response:

1. Address: Kilkenny Road, City of Vacaville, Solano County, CA, 95377 with coordinates 38°23'43.0"N 121°55'15.7"W
2. There is a Knox box located at all site entrance points off of Kilkenny Road.
3. Make operator contact for consent to enter site and updated information regarding the current situation. If the operator gives consent to enter site, follow BESS firefighting training procedures.
4. An approved Incident Command Station (ICC) and Fire Alarm Panel are provided off of Kilkenny Road at the southeast portion of the facility near site entrance points for both BESS facilities.
5. Information on which enclosures(s) is/are in alarm may be found on the Incident Command Station (ICC).
6. Recommended staging location is at least 75-ft away from the nearest battery enclosure. See section 3.4.
7. An underground water supply loop is provided for the fire hydrants located throughout the BESS Yard and is directly connected to the municipal supply for fire department use.
8. Toxic and flammable gases may be present but not be detected. Assume they are present. Wear PPE including a self-contained breathing apparatus and monitor the site for toxic and flammable gases.
9. Follow Section 4.1.4 for Recommended Suppression.
10. The Emergency Response Coordinator will issue an “all clear” only when the fire department informs them that it is safe to do so.
11. The ESS enclosure is not to be accessed until the O&M Manager or designated Emergency Response Coordinator gives authorization.

4.1.4 Recommended Suppression

In the absence of a justified reason to enter the site or pass the minimum approach distance (i.e. entrapment of personnel), it is advised that first responders and emergency personnel DO NOT TAKE DIRECT ACTION to suppress the fire, enter the ESS enclosure, or enter the site.

A manual fire alarm activation is provided at the FCC at the main entrance.

If deemed appropriate and safe to do so by the Incident Commander, water can be applied to the CATL and AESC ESS enclosure exterior and adjacent structures to prevent fire spread. Fire hydrants are located throughout the BESS Yards.

Water spray has been deemed safe as an agent for use on high-voltage systems and should only be applied by trained professionals.

The possibility of current leakage back to the nozzle, and ultimately the fire fighter, is insignificant based on testing data published in the Fire Protection Research Foundation report "Best Practices for Emergency Response to Incidents Involving Electric Vehicles Battery Hazards: A Report on Full-Scale Testing Results."

The following methods identified in the report are not recommended:

- Fire-fighting foams are not considered to be effective for these chemistries (lithium-ion batteries) because they lack the ability to cool sufficiently and can conduct electricity.
- Fire-fighting dry chemical powders will not cool the thermal runaway event / battery components.
- Carbon dioxide and inert gas suppressing agents will also eliminate visible flame but will likely not provide sufficient cooling to interrupt the thermal runaway process.

In accordance with Section 1.4 of this document, this section shall be reviewed annually and updated appropriately as fire protection technology changes.

4.1.5 CATL and AESC ESS Enclosure Fire Protection System Summary

The ESS enclosures located at Vaca Dixon Power Center BESS site **will** have the following characteristics:

- Thermal runaway management
- Mechanical ventilation system
- Automatic fire detection system
- Gas detection systems
- Deflagration Panels
- Interior fire sprinkler system with FDC on ESS enclosure (Factory installed, but not used)

The ESS enclosures located at Vaca Dixon Power Center BESS site **will not** have the following characteristics:

- Dry chemical fire suppression

4.1.6 Explosion Control

The CATL and AESC lithium-Ion batteries may release detectable levels of flammable gases such as Hydrogen (H_2) and other hydrocarbons in the event of thermal runaway, fire or when exposed to high temperatures. In the event that flammable gases are detected, the enclosure exhaust ventilation system is designed to exhaust the gases. An alarm signal will be transmitted to the main fire alarm panel identifying the enclosure and that flammable gas has been detected. The exhaust ventilation system will continue after detected gas concentrations within the enclosure have been reduced until manually reset.

A minimum of seventy-five feet (75') should be maintained between individuals and the incident enclosure whenever explosive conditions may be present as indicated by the enclosure and site fire alarm control panels. Staging of personnel and equipment shall be on the angles of the enclosure to stay out of the blast pressure wave as much as possible, as well as the blast radius of any doors or other potential projectiles.

Only attempt to extinguish fire if imminent threat to life safety exists. Lithium batteries off-gas when heated or when subjected to electrical or physical damage. These gases can accumulate inside the enclosure at levels well above the Lower Explosive Limit (LEL). Extreme caution shall be taken prior to any attempts to open any compartments or access panels on the system as the introduction of fresh air may bring atmospheric condition back into the explosion range and result in an explosion if a fire or another ignition source is present.

Gas monitoring must be continuously conducted at all times near the Fire Command Center to warn of potential atmospheric risks.

4.1.7 Toxic Gas Release

The CATL and AESC lithium-Ion batteries may release detectable levels of toxic gases including carbon monoxide (CO), carbon dioxide, hydrogen, methane, ethylene, and small traces of other gases in the event of fire or high temperatures. The Site Controller monitors the module and cell temperatures and will provide an alert through the SCADA system prior to the thermal runaway. This alert will be transmitted to the EMS, and Local Plant Controller.

Personnel shall remain clear of the enclosure and at no point approach during an off-gassing event unless there is imminent threat to life safety at which only properly trained and equipped personnel may approach. This approach shall be with full firefighter protective gear to include self-contained breathing apparatus (SCBA). Entry in this situation shall be at the sole discretion of the Incident Commander.

The pressure relief vents are located at the top front of the cabinet. Any approach to the front of the cabinet may pose a potential risk of exposure to the byproducts of combustion. Chemicals released from the batteries during a fire or explosion will be in a gaseous form and primarily pose an explosion hazard. However, as water is used in extinguishing flames, these gases can become acids which may cause skin irritation.

The thermal management system uses an ethylene glycol coolant. The Vaca Dixon BESS uses R-513A refrigerant and the Arges BESS uses R-32 refrigerant. These chemicals could leak during an event. R-513A and R-32 can become combustible in air when exposed to strong

ignition sources. In large enough quantities, these chemicals can pose a health risk. For more information on the coolant and refrigerants, refer to the Safety Data Sheets from CATL and AESC.

4.1.8 Assessing when it is safe to approach or open the enclosure.

Batteries remain energized even if all the contacts, breakers, and switches have been opened. Toxic or flammable gas may be present inside the enclosure. Visual observation of the exterior may not provide any information on the conditions within. The Incident Commander, with support from First Responders and Operations Manager, shall remotely monitor data and information from the battery management system (BMS) and the Fire Alarm Panel to assess the conditions internal to the enclosure.

If the Site Controller and fire alarm panel are reporting, the following information should be available:

1. Alarm status of smoke detectors and heat detectors
2. Gas Alarm
3. BMS can provide internal temperature and location information if thermal runaway has occurred as well as elevated temperature information for cells that may be at risk of entering thermal runaway

If the exhaust ventilation system is operational and exhausts gases from the enclosure, it is unlikely that flammable gas concentrations within the enclosure are above the LEL, based on a credible event.

Under certain conditions the thermal management system may continue to operate. If the conditions inside the enclosure have caused the thermal management system and BMS to cease reporting to the Site Controller, then extreme caution shall be utilized including maintaining a safe distance and **NOT** opening the enclosure. It is recommended that first responders stay clear of the enclosure and allow the enclosure to burn itself out.

Defensive firefighting is recommended only to prevent spread to nearby enclosures or equipment if the Incident Commander determines this is a possibility. Allow the battery packs to cool down while maintaining contact with the Equipment Manufacturer. This may take up to 48 hours or longer based on the severity of the incident. Monitor the SCADA telemetry and ESS enclosure with a thermal imaging camera.

Monitoring for the presence of smoke (which precedes or coincides with thermal runaway) and remote monitoring of the exterior temperature of the enclosure may provide information about the risk of fire or explosion. Maintaining a safe distance, air monitoring and a fire watch for 48 hours after temperatures drop and no smoke has been observed may be required to ensure it is safe to approach or open the enclosure. If the fire department or any other highly trained personnel has deemed the enclosures safe to open, then they may do so as long as they are confident that no risk to life exists.

When the ESS enclosures are finally opened to vent the area out, the enclosure doors shall remain open until the decommission phase. Stranded energy in ESS still poses a risk that can continue to exist for hours, days, and even weeks following an emergency event of a damage battery. Reference Decommissioning/Stranded Energy Plan for more information.

The fire department can deem the ESS thermal runaway event safe, to turn back over to the owner, once the following criteria are met:

1. Visible smoke and gas concentrations have shown to be actively decreasing
2. Toxic gas levels are within PAC-2 measured 25 feet away from the ESS event
    a. Carbon Monoxide - 83 ppm
3. Surface temperatures of all the ESS modules within the enclosure are around 200ºF
4. Final determination will be based on municipal Fire Department policies

5 MEDICAL EMERGENCY

5.1 Medical Emergency Response Procedures

If an employee is injured, or an accident has occurred on-site and first aid is not enough treatment for the emergency, 911 must be called. The call to 911 can be made by phone by any available site personnel. The caller must state to the dispatch that they are at the Vaca Dixon and Arges Power Center BESS facility. A second notification will be made to the O&M Building to inform others of the situation.

Employees with first aid/CPR training are identified on the emergency information notice board, and employees shall be aware of who on staff is so certified. At all times when the site is staffed, at least one first aid-certified member of staff shall be present. The location of first aid kits and automated external defibrillators (AEDs), if present, shall be identified by appropriate signage and indicated on the map in Appendix A. All employees shall designate a personal emergency contact, which shall be kept on file.

The following procedures apply for serious medical injuries such as loss of consciousness, heart attack, bone fractures, neck trauma, or severe burns.

1. If life-threatening, call 911.
2. Notify Operations and Safety Managers.
3. Provide name, exact location, number of injured persons, and a brief description of the incident.
4. On-site personnel shall meet emergency medical responders at the site entrance and direct them to the location of the incident.
5. Do not leave or move the injured unless directed to by Safety Managers or emergency medical responders.
6. Administer first aid if necessary.
7. The site manager shall inform the employee’s personal emergency contact.
8. Document incidents and keep them on file.

Note that emergency response procedures are ultimately the responsibility of the Incident Commander.

5.1.1 Attending an Incident

When attending an incident, the following procedures apply:

1. Clear a path to the injured person for Operations and Safety Managers and assign personnel to assist with signaling emergency medical responders to the location of the incident.
2. Identify the location of the Project Site entrance nearest to the incident and notify emergency medical responders.
3. Operations and Safety Managers shall meet emergency medical responders at the site entrance.
4. Direct and accompany emergency medical responders to the location of the incident.
5. Follow all directions of emergency medical responders.
6. Contact management personnel and subcontractors.
7. Document incidents and keep them on file.

5.1.2 Medical Facilities

The nearest medical facility and emergency room to the project site is Kaiser Permanente Vacaville Medical Center at 1 Quality Dr, Vacaville, CA 95688. Directions from the site entrance:

1. Take Kilkenny Rd to Leisure Town Rd
   - 1.6 miles (4 minutes)
2. Turn right onto Leisure Town Rd
   - 0.5 miles (2 minutes)
3. Continue on Quality Dr to the destination
   - 0.2 miles (2 minutes)

5.2 Non-Emergency Safety Procedures

5.2.1 Notification of Minor Incident

In the event a safety incident occurs where emergency response is not required (first aid treatment, near miss, etc.), work is to be stopped immediately and reported to the Emergency Response Coordinator and Lead Technician. Risk will be reassessed, adequate controls implemented, and the situation made safe before resuming the task. The event will be documented and kept on file.

5.2.2 Heat Related Illnesses

When the temperature exceeds 95 degrees Fahrenheit (35 degrees Celsius) or is expected to be so during the course of a shift or work project, the O&M Manager will hold short staff meetings to review the weather report; reinforce heat illness prevention with all workers; and provide reminders to drink water frequently, to be on the lookout for signs and symptoms of heat illness, and inform them that shade can be made available upon request.

Employees shall have free access to potable drinking water provided and located as close as practicable to the areas where employees are working. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water shall be encouraged.

Heat-Related Illness	Signs	Actions
Heat Stroke	• High body temperature (103˚F or higher) • Hot, red, dry, or damp skin • Fast, strong pulse • Headache • Dizziness • Nausea • Confusion • Losing consciousness (passing out)	• **Call 911 right away. Heat stroke is a medical emergency** • Move the person to a cooler place • Help lower the person's temperature with cool clothes or a cool bath • Do not give the person anything to drink
Heat Exhaustion	• Heavy sweating • Cold, pale, and clammy skin • Fast, weak pulse • Nausea or vomiting • Muscle cramps • Tiredness or weakness • Dizziness • Headache • Fainting (passing out)	• Move to a cool place • Loosen your clothes • Put cool, wet clothes on your body or take a cool bath • Sip water **Get medical help right away if:** • You are throwing up • Your symptoms get worse • Your symptoms last longer than 1 hour
Heat Cramps	• Heavy sweating during intense exercise • Muscle pain or spasms	• Stop physical activity and move to a cool place • Drink water or a sports drink • Wait for cramps to go away before you do any more physical activity **Get medical help right away if:** • Cramps last longer than 1 hour • You're on a low-sodium diet • You have heart problems
Sunburn	• Painful, red, and warm skin • Blisters on the skin	• Stay out of the sun until your sunburn heals • Put cool clothes on sunburned areas or take a cool bath • Put moisturizing lotion on sunburned areas • Do not break blisters
Heat Rash	• Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases)	• Stay in a cool, dry place • Keep the rash dry • Use powder (like baby powder) to soothe the rash

6 SECURITY INCIDENTS

Security incidents at an ESS facility can potentially compromise the safety systems and lead to hazardous conditions. In line with CFC Section 1207.4.9, the ESS installation is equipped with security measures to prevent unauthorized access. Any security breach should be treated as a potential safety risk to the ESS.

6.1 Bomb Threat

6.1.1 Response Plan

The purpose of this plan is to give direction to all site personnel in the event the Vaca Dixon Power Center BESS site is a target of an actual or threatened bomb assault/attack.

Anyone receiving a bomb threat shall:

1. Treat the caller with courtesy and respect. Complete the Bomb Threat Report (Appendix D). Use this sheet as a reference while talking with the caller making the threat.
2. Attempt to obtain as much information as possible. See the “Bomb Threat Checklist” (Appendix E).
3. Immediately notify the Vaca Dixon Power Center BESS site Emergency Coordinator by phone. Stop all radio transmissions from this point on until cleared by the Emergency Coordinator or other competent authority. Radio transmissions can activate electronic detonating or timing devices.

The Emergency Response Coordinator will immediately notify 911. The Emergency Response Coordinator shall:

1. Evaluate the threat and determine the appropriate course of action to take.
2. Notify law enforcement and ambulance.
3. Evacuate the facility as necessary.
4. Coordinate evacuation of any part of the surrounding community with local authorities as needed.
5. Coordinate the search of the site with the proper authorities.

6.1.2 Suspicious Items

If any suspicious item(s) are found, they are not to be touched. Barrier tape will be used to mark the area where the suspicious item(s) are by extending a continuous line of tape beginning immediately in front of the suspicious item(s) and extending to just outside the room exit. This will help guide local authorities to the suspicious item.

The Emergency Response Coordinator will be responsible for communicating the "All Clear" message once the threat has passed or is no longer present.

6.2 Chemical/Biological Agent Threat

The procedures described previously for a bomb threat shall be used for a chemical or biological agent threat.

Any person who is exhibiting signs and symptoms from a chemical or biological agent shall be isolated from other workers and be prepared for transport by emergency medical services.

6.3 Sabotage or Vandalism

Anyone detecting any act or threat of any act of sabotage or vandalism will immediately notify the Emergency Response Coordinator. The Emergency Response Coordinator will evaluate the situation and decide what actions to take. The following options shall be considered and implemented:

1. Notification of 911.
2. Corrective action as required, providing that no person will risk injury.
3. Evacuation of the facility.

6.4 Active Shooter

In an active shooter situation, employees shall:

1. Quickly determine what actions to take to protect life: Options include run, hide, and fight (described in the Ready.gov site). Use best judgment based on the specific circumstances of the incident. Getting away from the shooter(s) is the top priority. Call 911 when in a safe location and warn/prevent individuals from entering an area where an active shooter may be if possible.
2. When encountering responding police, remain calm and follow all instructions from the officers. Officers may shout commands and push individuals to the ground for their safety as well as their own. When law enforcement personnel arrive at the scene, personnel shall be aware of the following:
    - Follow all official instructions from the police
    - Remain calm, think, and resist the urge to panic
    - Immediately raise hands and spread fingers
    - Keep hands visible at all times
    - Put down any items
    - Avoid making sudden or quick movements toward officers
    - Do not point, scream, or yell
    - Do not ask for help from the officers when evacuating
    - Proceed in the direction advised by the officers
    - Provide all relevant information to police

7 ENVIRONMENTAL HAZARDS

7.1 Flooding and Flash Floods

Flash flooding is a result of heavy localized rainfall, such as that from slow-moving, intense thunderstorms. Flash floods often result from small creeks and streams overflowing during heavy rain. These floods often become raging torrents of water that rip through riverbeds and canyons, sweeping everything with them. Flash flooding can occur within 30 minutes to 6 hours of a heavy rain event. In hilly terrain, flash floods can strike with little to no advanced warning. Distant rain may be channeled into gullies and ravines, causing flash flooding in minutes. In the event of a flash flood, the following procedures shall apply:

1. During Periods of Thunderstorms:
    - Always remain alert to heavy rains in your immediate area or upstream from your location. It does not have to be raining at your location for flash flooding to occur.
    - Avoid all topographic depressions that may act as a channel or receptacle for flood water.
    - If you are in a vehicle and are positioned in a dry stream or riverbed, move the vehicle to high ground or abandon the vehicle and seek high ground. If you are already in the stream of water, stay with the vehicle and get on top of the roof.
    - Wait for the flood waters to subside before moving from the area.
    - Be aware of possible lightning.
2. Once the Flashflood has Stopped:
    - Report to the management of the designated area.
    - Attend to any injured, but do not move them unless they are in an unsafe area. Moving them may cause further injury.
    - Management will contact those who are outside by radio.
    - Call 911 to report any injuries, fires, or to receive any other emergency aid.
    - The designated on-site Incident Commander will contact those who are outside by radio or phone.
3. After all are Accounted For:
    - Management will evaluate the extent of the damage and decide whether or not to evacuate the site.
    - Check water and electrical lines, buildings, transformers, containers, inverters, etc. for damage.
    - Do not approach downed power lines. Call local utility PG&E to notify.
    - The Incident Commander will contact senior management and provide a status report.

7.2 High Winds and Dust Storms

Upon the issuance of high wind warnings:

- Take cover in a safe location. Lie down alongside walls.
- If inside, stay inside. If outside, find a secure object that you can attach yourself to. Seek cover alongside building foundations or in trenches. Cover your head and face with your arms, and keep your legs tightly together.
- Remain in place until the high winds subside to a safe speed. Move only when it is safe to do so. Call for help if you cannot move,

- Report to management or muster area for roll call.
- If any person is missing, a search will be made to determine their location and condition only if it is safe to do so.
- Attend to any injuries, but do not move unless they are in an unsafe area.
- Call 911 for emergency assistance.

7.3 Earthquakes

Earthquakes may strike with little to no warning. Earthquakes may result in a lack of basic necessities and loss of life, road and bridge damage, and collapse of buildings or destabilization of the base of buildings. Be aware that some earthquakes may be foreshocks and precursors to a more significant subsequent earthquake. Many earthquakes are also accompanied by aftershocks after the main event has occurred.

1. Earthquake Preparedness:
    - All employees must be trained in the earthquake procedure and evacuation plan.
    - The escape routes must be posted if required by the Emergency Response Coordinator.
    - Safety meetings and drills on earthquake preparedness must be held at least annually.
2. At the Onset of an Earthquake:
    - Drop to the ground, cover your head, and hold on to a sturdy object if available.
    - If outside, quickly find an area clear of possible falling objects.
    - Remain in a safe area until all movement has stopped.
3. When the Earthquake has stopped:
    - Report to the safest, closest designated area
    - Attend to any injured persons. Only move them if they are in an unsafe area. Moving them may cause further injury.
    - The designated on-site Incident Commander will contact those who are outside by radio or phone.
    - Be aware that there may be aftershocks that may be large enough to do additional damage to structures that were weakened during the original quake.
4. After all are Accounted For:
    - Management will evaluate the extent of the damage and decide whether or not to evacuate the site.
    - Check water and electrical lines, buildings, transformers, containers, inverters, etc. for damage.
    - Do not approach downed power lines. Call APS to notify.
    - Visually inspect battery equipment and fire alarm equipment for damage.
    - Call the monitoring station and ensure all readings are normal.
    - The Incident Commander will contact senior management and provide a status report.

7.4 Lightning

In the event of an approaching lightning storm within 30 miles of the site, the following procedures will apply.

1. Notify the O&M Manager and all on-site employees.
2. Stop work safely and head to staging and laydown yards in vehicles.
3. Remain at staging and laydown yards and get updates on weather conditions.

At the Onset of Lightning:

1. If you are inside, stay inside. Avoid contact with any conductive objects. Stay clear of electrical power sources. Stay off of landlines.
2. If you are outside, get inside a vehicle if available. If no shelter is available, get on the ground.
3. If you are caught in an open area, act quickly to find adequate shelter. The most important action is to remove yourself from danger. Crouching or getting low to the ground can reduce your chances of being struck but does not remove you from danger.
4. If you are caught outside with no safe shelter nearby, the following actions may reduce your risk:
    - Immediately get off elevated areas such as hills, mountain ridges, or peaks.
    - Never lie flat on the ground. Crouch down in a ball-like position with your head tucked and hands over your ears so that you are down low with minimal contact with the ground.
    - Never shelter under an isolated tree.
    - Never use a cliff or rocky overhang for shelter.
    - Immediately get out of and away from any body of water.
    - Stay away from objects that conduct electricity (barbed wire fences, power lines, etc.)

APPENDICES

Appendix A

MAP OF SITE

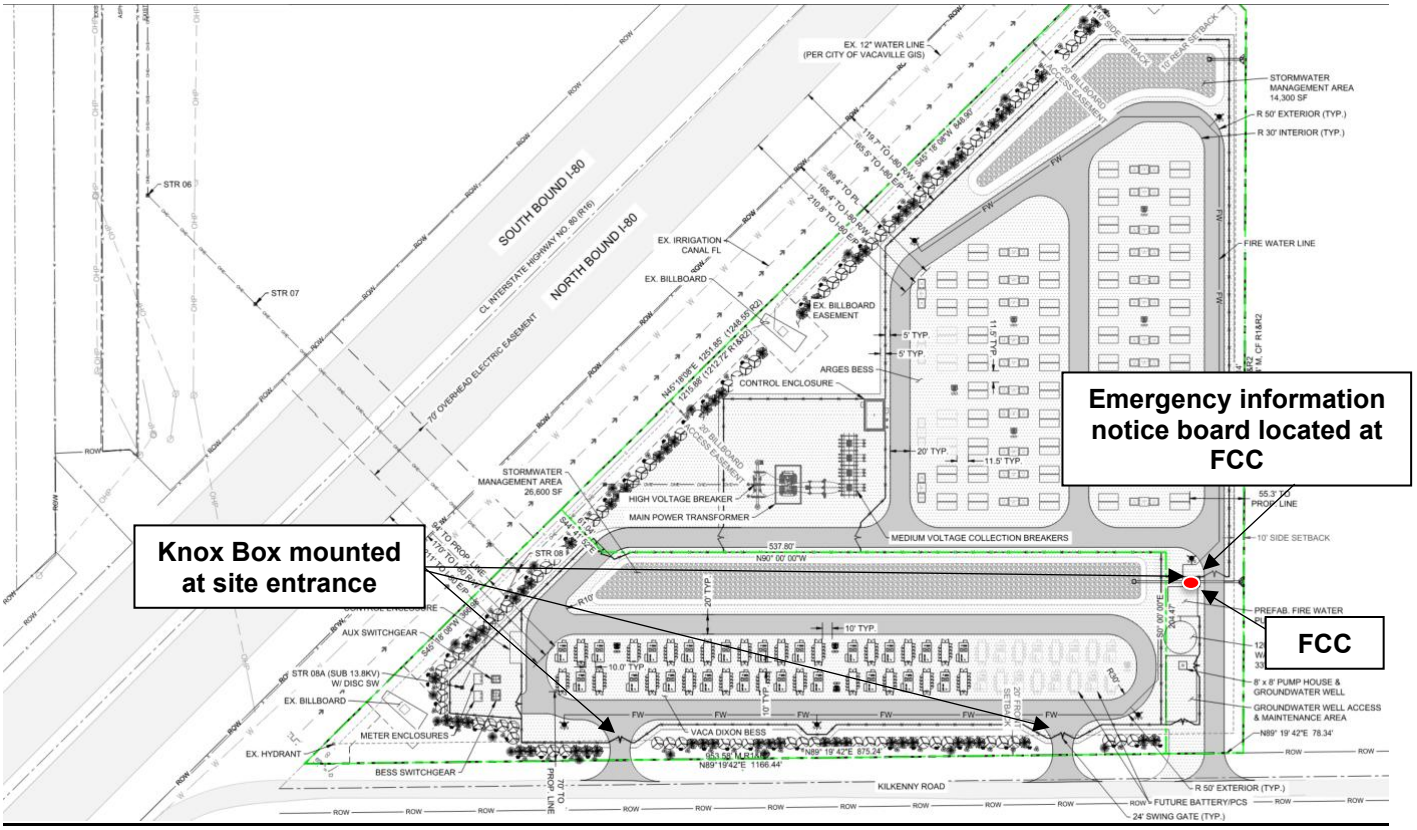


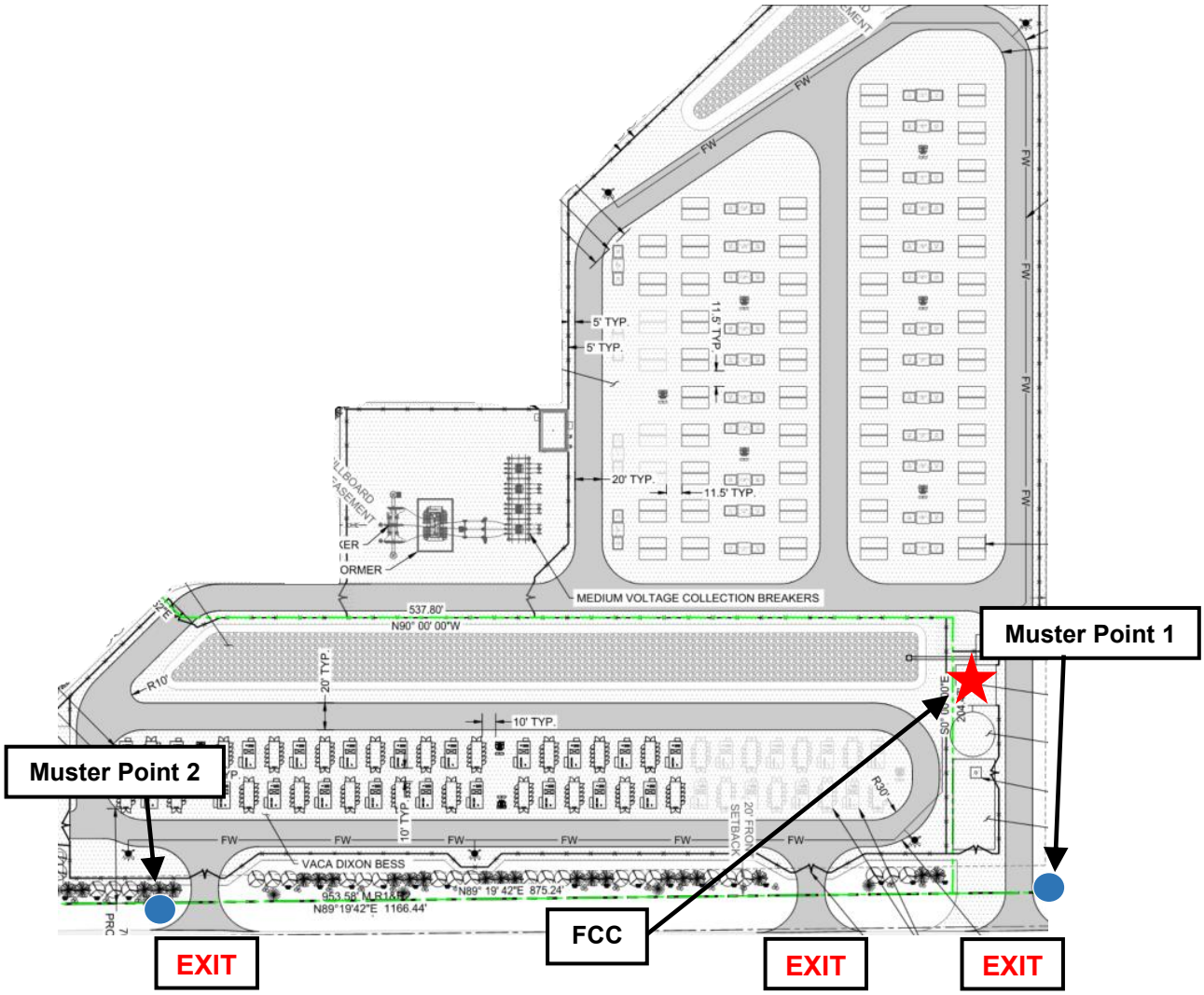
Figure A – Vaca Dixon Power Center Site Map (North ↑)

Appendix B
EMERGENCY RESPONSE MAP

Emergency Response Map

Site Name: Vaca Dixon And Arges Power Center Battery Energy Storage System
Site Address: Kilkenny Road, City of Vacaville, CA 95377

Fire/Police/Ambulance: 911
Tracy ROC Emergency Number: 209-836-9987



Emergency Response Plan Located within the Fire Command Center Cabinet

Personnel shall stay at the muster point until the fire department arrives

Figure B – Proposed Emergency Response Map (North ↑)

Appendix C
INCIDENT REPORT FORM

HAZARDOUS MATERIALS INCIDENT REPORT

INITIAL CONTACT INFORMATION

(Check one): _____ REPORTED/ACTUAL INCIDENT __ DRILL/EXERCISE

1. Date/Time of Notification: _____ Report received by: _____
2. Reported by (name & phone number or radio call signs): _____
   _____
3. Company/agency and position (if applicable): _____
4. Incident address/descriptive location: _____
   _____
   _____
5. Agencies at the scene: _____
   _____
6. Known damage/casualties (do not provide names over unsecured communications): _____
   _____
   _____

CHEMICAL INFORMATION

7. Nature of emergency: (check all that apply)
   ___ Leak ___ Explosion ___ Spill ___ Fire ___ Derailment ___ Other
   Description: _____
   _____
   _____
   _____
8. Name of material(s) released/placard number(s): _____
9. Release of materials:
   _____ Has ended _____ Is continuing. Estimated release rate & duration: _____
10. Estimated amount of material which has been released: _____
11. Estimated amount of material which may be released: _____

12. Media into which the release occurred: _____ air _____ ground _____ water
13. Plume characteristics:
    a. Direction (Compass direction of plume):_____ c. Color: _____
    b. Height of plume: _____ d. Odor:_____
14. Characteristics of material (color, smell, liquid, gaseous, solid, etc) _____
15. Present status of material (solid, liquid, and gas):_____
16. Apparently responsible party or parties: _____

ENVIRONMENTAL CONDITIONS

17. Current weather conditions at incident site:
    Wind From:_____ Wind Speed (mph):_____Temperature (F): _____
    Humidity (%): _____Precipitation: _____Visibility: _____
18. Forecast:_____
19. Terrain conditions:_____

HAZARD INFORMATION

(From ERP, MSDS, CHEMTREC, or facility)

20. Potential hazards:_____
21. Potential health effects:_____
22. Safety recommendations:_____
23. Recommended evacuation distance: _____

IMPACT DATA

24. Estimated areas/ populations at risk:_____

25. Special facilities at risk: _____

26. Other facilities with HAZMAT in area of incident: _____

PROTECTIVE ACTION DECISIONS

27. Tools used for formulating protective actions
    _____ a. Recommendations by facility operator/responsible party
    _____ b. *Emergency Response Plan*
    _____ c. Material Safety Data Sheet
    _____ d. Recommendations by CHEMTREC
    _____ e. Results of incident modeling (CAMEO or similar software)
    _____ f. Other: _____

28. Protective action recommendations:
    ____ Evacuation ____Shelter-In-Place ____Combination ____No Action
    ____ Other _____

    Time Actions Implemented

    _____

    _____

    _____

29. Evacuation Routes Recommended: _____

EXTERNAL NOTIFICATIONS

30. Notification made to:
    _____ National Response Center (Federal Spill Reporting) 1-800-424-8802
    _____ CHEMTREC (Hazardous Materials Information) 1-800-424-9300
    _____ State Emergency Response Commission
    _____ SERC written follow-up forms

31. Other Information: _____

Source: Washington State Emergency Response Commission. Local Emergency Planning Committee (LEPC) Hazardous Materials Emergency Response Plan TEMPLATE. September 2011. http://www.ecy.wa.gov/epcra

Appendix D
BOMB THREAT REPORT

*** * * KEEP CALLER ON THE LINE AS LONG AS POSSIBLE! * * ***

Exact words of caller:

_____

_____

Questions to ask the caller:

1. When is the bomb going to explode? _____
2. Where is the bomb right now? _____
3. What kind of bomb is it? _____
4. What does the bomb look like? _____
5. Why did you set the bomb? _____
6. Where are you calling from? _____
7. What is your name? _____

Try to determine the following

IDENTITY: • male • female • adult • juvenile (age? _____)

VOICE: • loud • high-pitched • deep • raspy • pleasant

• disguised • broken Other: _____

ACCENT: • local • not local • foreign • regional _____

RACE: • Caucasian • Black • Hispanic • Asian

Other: _____

SPEECH: • educated • average • illiterate • obscene

Other: _____

MANNER: • calm • angry • rational • irrational • coherent

• incoherent • deliberate • self-righteous • laughing • intoxicated

BACKGROUND NOISES:

- office machines
- factory machines
- bedlam
- trains
- quiet
- voices
- mixed sounds
- airplanes
- music
- traffic
- party

Other: _____

If the voice is familiar to you, who did it sound like? _____

Additional Information: _____

_____

Date____/____/____ Time: _____:_____ a.m./p.m. Received by: ___

Appendix E
BOMB THREAT CHECKLIST

Mail Threat:
_____1. Handle documents as little as possible to preserve fingerprints. _____2. Hand deliver immediately to O&M Manager.
Phone Threat:
_____1. Complete Bomb Threat Form. _____2. Deliver completed form to O&M Manager. _____3. Notify Supervisor immediately.
O&M Manager:
_____1. Gather all information regarding threat. _____2. Decide upon course of action. _____3. Coordinate searches with proper authorities.
Suspicious Objects:
_____1. DO NOT TOUCH OR ATTEMPT TO MOVE! _____2. Notify Police—911.
Evacuation:
_____1. Announce over public address system, give location where to assemble. Do not use the radio. _____2. Enlist volunteers to remain and shut down site.
Re-entry:
_____1. Determined based on: _____a. "All-clear" given by bomb disposal unit. _____b. O&M Manager's judgment that danger is passed. _____2. Full report prepared.

Appendix F

CHEMICAL/BIOLOGICAL AGENT THREAT REPORT

*****KEEP CALLER ON THE LINE AS LONG AS POSSIBLE*****

Exact words of caller:

_____

_____

Questions to ask the caller:

1. What chemical or biological agent is it? _____
2. When is the agent going to be released? _____
   (date) (time)
3. Where is it right now? _____
   (Building) (Floor) (Room)
4. Who put it there? _____
5. What does it look like? _____
6. What will cause it to spread? _____
7. What will trigger it? _____
8. Where did you get the agent? _____
9. Why are you doing this? _____
10. What is your name? _____
11. What is your telephone number and address? _____

Try to determine the following

IDENTITY: • male • female • adult • juvenile (age? _____)

VOICE: • loud • high-pitched • deep • raspy • pleasant

• disguised • broken Other: _____

ACCENT: • local • not local • foreign • regional: _____

RACE: • Caucasian • Black • Hispanic • Asian

Other: _____

SPEECH: • educated • average • illiterate • obscene

Other: _____

MANNER: • calm • angry • rational • irrational • coherent

• incoherent • deliberate • self-righteous • laughing • intoxicated

BACKGROUND NOISES:

• office machines • factory machines • bedlam • trains • quiet

• voices • mixed sounds • airplanes • music • traffic

• party Other: _____

If the voice is familiar to you, who did it sound like? _____

Additional Information: _____

_____

Date____/____/_____ Time: _____:_____ a.m./p.m. Received by: __

Appendix G

CHEMICAL/BIOLOGICAL AGENT THREAT CHECKLIST

Mail Threat:
_____ 1. Handle documents as little as possible to preserve fingerprints. _____ 2. Hand-deliver immediately to O&M Manager.
Telephone Threat:
_____ 1. Complete the Chemical/Biological Threat Report form. _____ 2. Deliver completed form to O&M Manager immediately.
O&M Manager:
_____ 1. Gather all information regarding threat. _____ 2. Decide upon course of action.
Searches:
_____ 1. Comprehensive—To be conducted by trained law enforcement personnel only.
Suspicious Objects:
_____ 1. Do not touch or attempt to move. _____ 2. Notify police.
Evacuation:
_____ 1. Make a site-wide announcement and give location where to assemble. **_____ 2. Enlist volunteers to remain and shut down site.**
Re-entry:
_____ 1. Determined based on: **_____ a. "All-Clear" given by competent authority.** **_____ b. O&M Manager's judgment that danger has passed.** **_____ 2. Full report prepared.**

Appendix H
SAFETY DATA SHEETS

SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product identifier : 2025004937099

Product name : AE30017704220
TEODUR AP
RAL 7042 TRAFFIC GREY A
MATT SMOOTH

Product type : Powder.

Other means of identification : Not available.

Date of issue : 6 March 2020

Version : 2

Date of previous issue : 15 December 2019

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Powder coating for industrial use.

Uses advised against : For industrial use only by trained professionals. Not for sale to or use by consumers.

1.3 Details of the supplier of the safety data sheet

Axalta Coating Systems Germany GmbH & Co. KG
Christbusch 25
DE 42285 Wuppertal
+49 (0)202 529-0

e-mail address of person responsible for this SDS : sds-competence@axalta.com

National contact

Axalta Powder Coating Systems UK Ltd.
Whessoe Road
GB Darlington, County Durham. DL3 0XH
+44 (0)1325 355371

1.4 Emergency telephone number

Supplier

+(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Aquatic Chronic 3, H412

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms : Not applicable.

Signal word : No signal word.

Hazard statements : H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : P273 - Avoid release to the environment.

Response : Not applicable.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Not applicable.

Supplemental label elements (CEPE) :

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : May form explosible dust-air mixture if dispersed.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	REACH #: 01-2119977073-34 CAS: 26741-53-7	≤1	Aquatic Chronic 1, H410 (M=1) **See Section 16 for the full text of the H statements declared above.**	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern
[6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.

Eye contact : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.
Coating powders can cause localised skin irritation in folds of the skin or under tight clothing.

SECTION 4: First aid measures

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Recommended: alcohol-resistant foam, CO_2 blanket, water spray or mist.

Unsuitable extinguishing media : Do not use water jet.
Do not use inert gas under high pressure (e.g. CO2).

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard.

Hazardous combustion products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

Special protective actions for fire-fighters : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.

Special protective equipment for fire-fighters : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Exclude sources of ignition and ventilate the area. Avoid breathing dust. Refer to protective measures listed in sections 7 and 8.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up : Contain and collect spillage with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not use a dry brush as dust clouds or static can be created.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

Advice should be taken from a competent occupational health practitioner on the assessment of employees with skin or respiratory complaints before the individual is exposed to the uncured product.

7.1 Precautions for safe handling : Precautions should be taken to prevent the formation of dusts in concentrations above flammable, explosive or occupational exposure limits.
Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources.
Mixture may charge electrostatically: always use earthing leads when transferring from one container to another.
Operators should wear antistatic footwear and clothing and floors should be of the conducting type.
Keep away from heat, sparks and flame.
Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
Put on appropriate personal protective equipment (see Section 8).
Always keep in containers made from the same material as the original one.
Comply with the health and safety at work laws.
Do not allow to enter drains or watercourses.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

Additional information on storage conditions

Observe label precautions. Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight. Keep container tightly closed.
Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	DNEL	Long term Oral	0.275 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.275 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.55 mg/ kg bw/day	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Avoid breathing dust. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain exposure to dusts below the OEL, suitable respiratory protection must be worn.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear should be used when there is a likelihood of exposure.

Skin protection

Body protection : Personnel should wear protective clothing. Care should be taken in the selection of protective clothing to ensure that inflammation and irritation of the skin at the neck and wrists through contact with the powder are avoided.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

SECTION 8: Exposure controls/personal protection

Respiratory protection : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators.

Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.

Environmental exposure controls : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Solid.
Colour	: Not available.
Odour	: Not available.
Odour threshold	: Not available.
pH	: Not applicable.
Melting point/freezing point	: Not available.
Initial boiling point and boiling range	: Not applicable.
Flash point	: Closed cup: Not applicable. [Product does not sustain combustion.]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Lower: 40 g/m³
Vapour pressure	: Not available.
Vapour density	: Not available.
Relative density	: 1.571 g/cm³
Solubility(ies)	: Partially soluble in the following materials: cold water.
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not applicable.
Viscosity	: Not available.
Explosive properties	: Not available.
Oxidising properties	: Not available.
Weight volatiles	: 0 % (w/w)
VOC content	: 0 % (w/w)

9.2 Other information

Solubility in water : Not available.

room temperature (=20°C)

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.

10.5 Incompatible materials : Not applicable.

10.6 Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Not applicable

SECTION 11: Toxicological information

11.1 Information on toxicological effects

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.
Coating powders can cause localised skin irritation in folds of the skin or under tight clothing.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	LD50 Oral	Rat	5580 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	5580	N/A	N/A	N/A	N/A

Irritation/Corrosion

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	Skin - Severe irritant	Rabbit	-	0.5 Grams	-

Conclusion/Summary : Not available.

Sensitisation

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

There are no data available on the mixture itself.
Coating powder residues should not be allowed to enter drains or watercourses or be deposited where they could affect ground or surface waters.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

Product/ingredient name	Result	Species	Exposure
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	LC50 70.7 mg/l	Fish	96 hours
	NOEC 0.1 mg/l	Daphnia	21 days

Conclusion/Summary : Not available.

12.2 Persistence and degradability

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	OECD 301 B	9 % - 28 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
BIS(2,4-DI-T-BUTYLPHENYL) PENTAERYTHRITOL DIPHOSPHITE	-	-	Not readily

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Disposal considerations : Do not allow to enter drains or watercourses.
Dispose of according to all federal, state and local applicable regulations.
If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.
For further information, contact your local waste authority.

European waste catalogue (EWC)

SECTION 13: Disposal considerations

The European Waste Catalogue classification of this product, when disposed of as waste, is:

Waste code	Waste designation
08 02 01	waste coating powders

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal considerations : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.
Empty containers must be scrapped or reconditioned.
Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Type of packaging	European waste catalogue (EWC)	
CEPE Paint Guidelines	15 01 10*	packaging containing residues of or contaminated by hazardous substances

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	9005	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	-	-
14.3 Transport hazard class(es)	-	9	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	Yes.	No.	No.

Additional information

ADN : The product is only regulated as a dangerous good when transported in tank vessels.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 14: Transport information

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not applicable.

The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment information.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Industrial use : The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

15.2 Chemical safety assessment : No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

CEPE code : 3

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements

H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Aquatic Chronic 1, H410	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 3, H412	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

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Version : 2

Notice to reader

This product is intended for industrial use only.

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Users of Axalta products should read all relevant product information prior to use, and make their own determination as to the suitability of the products for their intended use. Except as otherwise required by applicable law, AXALTA MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The information on this SDS relates only to the specific product identified in Section 1, Identification, and does not relate to its possible use in combination with any other material or in any specific process. If this product is to be used in combination with other products, Axalta encourages you to read and understand the SDS for all products prior to use.

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R32 Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: DIFLUOROMETHANE
Company: Shandong Dongyue Chemical Co.,Ltd
Street Address: Huantai County,
City, Province,Zip,Country: Zibo City,Shandong Province,China, 256401
Chem-tract: +86-533-8222579
MEDICAL: +86-533-8222259

2. Composition/Information on Ingredient

Substance Name	CAS Registry Number
DIFLUOROMETHANE	75-10-5

Formula: CH2F2
Synonyms: Carbon fluoride hydride * Difluoromethane * Methylene Difluoride

3, Hazards Identification

EMERGENCY OVERVIEW
Flammable Highly Flammable, Extremely Flammable Liquefied Gas.
For additional information on toxicity, please refer to Section 11

4, FIRST AID MEASURES

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician
INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

5, Fire Fighting Measure

FLASH POINT N/A
AUTOIGNITION TEMP N/A

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FLAMMABILITY N/A

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazards: Emits toxic fumes under fire conditions

6, Accidental Release Measure

PROEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area and keep personal upwind. Shut off all sources of ignition. Shut off leak if there is no risk.

METHODS FOR CLEANING UP

Ventilate area and wash spill site after material pickup is complete.

7, Handling and Storage

HANDLING

User Exposure: Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place. Cylinder temperature should not exceed 125 F (52℃)

SPECIAL REQUIREMENTS

Contents under pressure.

8, Exposure Controls

ENGINEERING CONTROLS

Mechanical exhaust required .Safety shower and eye bath.

WORK PRACTICES

Store and use with adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator in nonventation. Areas and/or for exposure above the TLV or PEL.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

9, Physical/Chemical Properties

Appearance;	N/A
Molecular Weight	52.02 AMU
pH	N/A

BP/BP Range	-51.6℃
MP/MP Range	-136℃
Freezing Point	N/A
Vapor Pressure:	N/A
Vapor Density	N/A
Saturated Vapor Conc,	N/A
SG/Density:	1.1 g/cm3
Bulk Density:	N/A
Odor Threshold	N/A
Volatile %	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rete	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A= not available

10, Stability and Reactivity

STABILITY

Reactions to Avoid: Reacts violently with:

Materials to Avoid: Sodium, Potassium, Calcium, Alkali metals.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition products: Carbon monoxide, Carbon dioxide, Hydrogen fluoride.

11, Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Can cause severe frostbite. Prolonged or repeated exposure to skin causes defeating and dermatitis. May cause skin irritation.

Eye Contact: May cause eye eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.

Multiple Routes: May be harmful by inhalation, ingestion, or skin absorption.

TARGET ORGEN OR SYSTEM

Damage to the heart. Heart.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: Narcotic effect. Exposure to large amounts can cause: Damage to the heart.

Inhalation

Mouse Rat

1,810,000 mg/m3 1,890,000 mg/m3

LC 50 LC50

Remarks: Behavioral: Change in motor activity.

Behavioral: Ataxia. Lungs, Thorax, or Respiration: Respiratoty depression.

CHRONIC EXPOSURE – TERATOGEN

Species: Rat

Dose: 50000 PPM/6H 50000 PPM/6H

Route of Application: Inhalation

Exposure Time: (6-15 PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e, g,. stunted fetus)

Effects on Embryo or Fetus; Fetotoxicity (except death, e, g, stunted fetus)

12, Ecological Information

No data available.

13, Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Observe all federal, state, and local environmental regulations.

APPROPRIATE METHOD OF DISPOSAL OF CONTAMINATED PACKAGING

Caution: No-return cylinder. Do not reuse. Empty cylinder will contain hazardous residue.

Follow proper disposal techniques.

14, Transport Information

Proper Shipping Name: Difluoromethane

Class: 2 Hazard labels: 2.1 UN Number:3252

Not Allowed – Aircraft; Cargo aircraft only. Not permitted on passenger aircraft.

15 Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: F

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Indication of Danger: Highly Flammable.
R:11
Risk Statements: Highly Flammable.
S: 9 16 33
Safety Statements: Keep container in well-ventilated place. Keep away from sources of ignition – no smoking , Take precautionary measures against static discharges.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU).
Risk Statements: Extremely flammable liquefied gas.
Safety Statements: keep container in a well-ventilated place. Keep away from sources of ignition – no smoking. Take precautionary measures against static discharges.
US Statements: Target organ: Heart

UNITED STATES REGULATORY INFRORMATION

SARA LISTED; No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFROMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No
NDSL: Yes

16, OTHER INFORMATON

Revision Information
Revision Date 03 JAN 2024
Key
N/E= Not Established N/A=Not Applicable (R)=Registered Trademark

The end of MSDS

Appendix I
CONSIDERATIONS DURING CONSTRUCTION

ROLES AND RESPONSIBILITIES DURING CONSTRUCTION

During construction the key change from the ERP is that the General Contractor will be the Emergency Response Coordinator. The Emergency Response Coordinator takes control of the emergency and any resources necessary until the emergency has been eliminated and the necessary cleanup and/or restoration are complete. This person shall lead the incident reporting. All personnel on site shall know who the Emergency Response Coordinator on-duty is during their time on site. Remote operators shall likewise know who the Emergency Response Coordinator is for any given shift.

The Emergency Coordinator or a designee will be responsible for notifying the appropriate regulatory agencies and, if necessary, the Emergency Response Contractor or mutual aid groups. A list of emergency contacts and agencies that may be notified in the event of an emergency is provided in the ERP. The incident will be documented and kept on file.

The Emergency Response Coordinator is also responsible for seeing that this plan is implemented and will appoint an adequate number of personnel to enforce the plan, assure everyone is familiar with this plan and act as a liaison with the local Fire Department(s).

GENERAL CONTRACTOR EMERGENCY ACTION PLAN

The General Contractor shall prepare an emergency action plan per OSHA standard 1926.35. This plan should address the following items:

- Types and locations of hazardous materials (refer to Safety Data Sheets)
- Potentially dangerous operations or conditions
- Chemical storage sites
- Remote job sites
- Workplace communication systems
- Employee work shifts
- Means of egress
- Evacuation routes and means to maintain routes in all ground and weather conditions
- Fixed and portable fire extinguishing systems
- Employee alarm systems
- Protection of visitors and members of the public
- Adverse weather conditions

BESS STORAGE RECOMMENDATIONS

During the process of construction and commissioning, any BESS enclosures that are to be stored between arrival and installation shall be stored following the guidance of NFPA 855 – Standard for the Installation of Stationary Energy Storage Systems – 2023 Edition as stated in the following subsections.

It is important to note that the following storage guidance from NFPA 855 is intended for batteries. The BESS enclosures that will be on-site are not batteries themselves but contain battery cells within. The enclosures have gone through full-scale UL 9540A testing as operational units. However, in the construction phase of the project, the enclosures are not yet operational and there are safety features of each enclosure that may not yet be activated including smoke, heat and gas detection and exhaust ventilation. For these reasons, Coffman recommends these enclosures be regarded as batteries while on-site but not operational for Section 4 of this document, following the methodology of NFPA 855 - 2023 Edition - Chapter 14 - Storage of Used or Off-Specification Batteries.

No temporary buildings or transportation containers will be used for this site. Information below on such arrangements is used to further guide construction management crews if any storage configurations change on-site.

The placement of an ESS enclosure in its final location is not considered storage if commissioning and safety features are operational within 3-months of setting.

Per NFPA 241 § 5.3.3, any non-storage temporary structures used during the construction process shall be equipped with a minimum of one fire extinguisher suitable for all classes of fires that are expected inside the structure. The extinguisher(s) shall be located so that travel distance to an extinguisher does not exceed 50 ft within the structure.

Outdoor Storage Locations

The planned storage arrangement for this project is directly outside so the storage areas or “piles” shall comply with the following:

1. Be limited to 200 ft^2 in area and separated from other piles by 10 ft.
2. Be separated by a minimum 20 ft from:
    a. Lot lines
    b. Public ways
    c. Buildings
    d. Other storage
    e. Hazardous materials
    f. Other exposure hazards
3. Be permitted to have a 3 ft clearance from exposures where a 3-hour freestanding fire barrier, suitable for exterior use, and extending 15 ft above and extending 15 ft beyond the physical boundary of the pile is provided to protect the exposure.

Indoor Storage Locations

While it is not anticipated that any batteries or ESS will be stored inside during construction and commissioning, the following information is provided for reference should this change.

If stored in a **room or space**, the room or space shall:

1. Be classified as an industrial high-hazard occupancy.
2. Be separated from the remainder of the building areas by fire barriers with a 3-hour fire resistance rating and with horizontal assemblies with a 3-hour fire resistance rating constructed in accordance with the local building code.
3. Be provided with a fire alarm system activated by a radiant-energy detection system with occupant notification installed in accordance with NFPA 72 – National Fire Alarm Code.
4. Be provided with an automatic sprinkler system designed and installed in accordance with NFPA 13 – Standard for the Installation of Sprinkler Systems.
5. Be equipped with an explosion protection system in accordance with NFPA 68 or 69.

These fire incident detection and mitigation measures shall be documented in a Fire Incident Prevention and Mitigation Plan to be provided to the AHJ for review and approval.

Storage Precautions

In accordance with the CATL and AESC transportation and storage guidelines, should the ESS enclosures or battery cells require storage for extended periods of time, the following is advised:

1. Long-term storage of batteries is not recommended and causes irreversible capacity loss. After 12 months of storage at the recommended temperature (less than or equal to 95ºF) the typical irreversible capacity loss is 3 to 6 percent.
2. Recommended battery storage ambient humidity of less than 60%.
3. Recommended battery stored between 30%-50% State-of-Charge (SOC). During storage, all external power-consuming devices must be disconnected. Perform regular inspections. Maintain detailed inspection records and promptly address any abnormal conditions.
4. Store in a dry, clean, and well-ventilated warehouse to prevent dust and moisture ingress and ensure no short circuits.
5. Avoid contact with corrosive organic solvents or gases to prevent battery corrosion and rust.
6. Avoid direct sunlight.
7. During storage, if any questions arise, contact the after-sales service for consultation and handling at +86 400-918-0889
8. Storage facilities should be compliant with the appropriate local fire code requirements.

DAMAGE TO BESS EQUIPMENT DURING CONSTRUCTION

Battery Cells

Should a battery cell be damaged during handling, storage, or transportation reference section 4.1.8 of the ERP for assessing if it is safe to approach the enclosure.

Fire Alarm / BMS Systems

Any ESS enclosure that has a non-functional Fire Alarm or Battery Management System (BMS) shall be shut down immediately.

Note that a system shutdown will result in electrical isolation of the battery strings and cessation of battery charging or discharging. A system shutdown will not de-energize the battery bank, nor will it guarantee that a fault or thermal runaway vent has stopped. Do not open the ESS enclosure until deemed safe to do so by an individual qualified to direct such decision.

COMMISSIONING

Prior to starting any commissioning, the commissioning plan, documentation requirements, and design verification checklist shall be finalized by all interested parties. In addition to CATL and AESC procedures, the following site considerations shall be implemented:

Fire Command Center (FCC)

The overall site Fire Command Center (FCC) shall be operational prior to commissioning of individual ESS fire alarm panels. Individual ESS enclosure fire alarm systems shall be operational prior to energization of that ESS enclosure. See Appendix A for location.

Fire Water Access

The on-site fire hydrants shall be operational prior to commissioning. The ESS enclosures were tested in accordance with UL 9540A without the use of water and demonstrated that unit-to-unit propagation does not occur. See Figure 2.3.2 for fire hydrant locations.

Fire Access Roads

For any ESS being commissioned, the fire access road to the equipment shall be clear with an unobstructed width of at least 20-ft and unobstructed vertical clearance of not less than 13’-6”, so that responding fire department equipment can access the location of the ESS. See Appendix A for location.

Appendix J

AESC BESS EMERGENCY RESPONSE GUIDELINE

This Appendix is protected under a confidentiality agreement and has been redacted from this version of the report.

Appendix K

CATL BESS EMERGENCY RESPONSE GUIDELINE

This Appendix is protected under a confidentiality agreement and has been redacted from this version of the report.