

 <p>STANDARD OPERATING PROCEDURE</p>	SOP Number	2023A
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Title	Hybrid and Electric Vehicle Emergency Response	

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1. Summary

- This document is designed to provide First Responders with standard operating procedures to safely interact with hybrid and electric vehicles and perform appropriate actions within their scope of KSA's and JPR's as assigned and established by the AHJ.

2. Scope

- This SOG should be applied by all First Responders when interacting with hybrid and electric vehicles for any of the following conditions:
 - Stranded or Disabled Vehicle
 - Motor Vehicle Accident
 - Vehicle Smoke or Fire
 - Flooded Vehicle
 - Medical Emergency involving vehicle occupants still in the vehicle.
 - Structure Fire with Vehicle exposure.
 - Structure Fire with Vehicle involvement.
 - Proximity Fire with Vehicle Exposure
 - Charging Malfunction with Vehicle plugged in

3. List equipment and resources required

- Structural PPE with SCBA is required while working around vehicles when signs of thermal runaway, electrical damage, submersion, vehicle rollover or heavy physical damage are present.
- The following is a list of recommended items for safely interacting with hybrid and electric vehicles:
 - CO Meter as a minimum, 4 Gas Meter, CO2 meter, Sensit
 - Thermal Imaging Camera
 - EV Fire Blanket

4. Procedure

- **VEHICLE IDENTIFICATION**

- **Introduction:** Passenger electric vehicles (EV) can pose unique hazards associated with high voltage systems (including the battery system). These hazards can be chemical, electrical, and thermal. Scenarios that responders should be cautious responding to and working around EVs are the following: mechanical breakdowns, collisions, vehicle fires, structure fires with EV inside the structure, and flooding/water submersion.
 - **INITIAL CALL:** Dispatch shall make every effort to identify the vehicle as a hybrid or electric vehicle while processing the initial call and informing responding companies. If vehicle make, model, and manufacturing year can be ascertained it shall also be communicated to responding companies. Call assignment shall be adjusted to reflect the increased threat level of hybrid/electric vehicles and needed equipment.
 - **UPON ARRIVAL:** Establish safe work zone through apparatus positioning and proper traffic management tools.
 - **Identify or Confirm Hybrid Electric Vehicle through formal and/or informal assessment. Perform initial size up and adjust safe work zone if needed based on vehicle presentation.** Passenger vehicle badging (vehicles <10,000 lbs) may be visible up to 50 feet away. Company officers should establish a safe work zone through apparatus positioning and proper traffic management tools. Exterior EV badging locations may be in the following locations: right rear on trunk or hatchback, lift gate or bumper, left/right side of vehicle, front fender, front door panel, front pillar, or front surface. An EV safety oriented message may be HYBRID, ELECTRIC, EV, BEV (battery electric vehicle), PLUG IN HYBRID. The letter "E" (in upper or lower case may designate electric version of the model. The letter "H" may designate hybrid version. Interior durable emblems may be visible from driver or passenger window near the key ignition switch, start, or power button. Vehicle high voltage emblem may be on sun visor as well.



High Voltage Sign

Finally, electric vehicles may not have radiator grilles and will not have muffler exhaust systems.

- **Any indications of heavy physical damage, smoke/gas/fire, submersion, or**

exposure to heat or fire should require safe work zone of 75' minimum and Full PPE with SCBA.

- Perform 360 hot lap at a safe distance from the vehicle with 4 gas meter and thermal imaging camera, Sensit, and/or CO2 monitor (if available) to detect the presence of CO/LEL or the visual indication of off gassing. Heavily damaged vehicles may have displaced batteries or other high voltage equipment that should be identified and avoided.
- CONTACT THE ESA: 855 ESA SAFE or other services and initiate on-scene support if needed.
- Prioritize Life Safety needs followed by Property Conservation and establish Action Plan.
- If occupants are still in the vehicle and gas/smoke/fire are present, perform rapid extrication sequences in accordance with AHJ SOG.
- Protect firefighters and occupants with a fog pattern to push gases, smoke and fire way.

- **IMPLEMENT ACTION PLAN (HAZARD MANAGEMENT)**

- Position appropriate wheel chocks to prevent vehicle movement. Hybrid and Electric Vehicles may present without audible indications of being energized or in drive mode and have the potential to accelerate at rapid rates. First Responders should use extreme caution when approaching the vehicle until the vehicle has been fully secured. Avoid walking, working or standing between EVs/hybrid vehicles and other objects.
- Attempt to gain access to the passenger cockpit through door handle access. If electromechanical door handles do not present and do not operate the door, use appropriate glass removal techniques to gain access through either of the front windows. Actuate the interior manual door release overrides and open the door(s).
- If the doors cannot be opened, visually assess the cockpit dash display for illumination and signs of vehicle status. If the vehicle is on, attempt to locate a power button or ignition key and turn the vehicle off resulting in an INITIAL SHUTDOWN. If key fobs, vehicle cards, or cell phones are present, remove those items a minimum of 30' from the involved vehicle. If the passenger cockpit cannot be accessed and the vehicle cannot be turned off due to obstruction or other scenario, progress to the following step.
- Locate, access, and perform the vehicle energy isolation procedure as needed. Minor to moderately damaged vehicles may not require any actions other than vehicle shut down. SECONDARY SHUTDOWN Procedures may be required and will be specific to the vehicle involved. If specific vehicle guidance is not being utilized, access the low voltage battery and the vehicle First Responder Cut loop if present and disconnect or cut the negative battery cable or plug and cut or disconnect the Fireman's Loop.
- Some vehicles, and special circumstances may require removal of fuses, relays, or manual service disconnects. High Voltage Service Disconnects should only be performed with proper guidance and appropriate PPE. Arc Flash potential is always present when interacting with high voltage components.
- DO NOT CUT, INADVERTENTLY COMPRESS OR CONTACT ORANGE HIGH VOLTAGE CABLES OR VEHICLE COMPONENTS WITH ELECTRICAL HAZARD WARNING LABELS. DO NOT CUT FIRST RESPONDER LOOPS OR BATTERY CABLES WHEN VEHICLE PRESENTATION DOES NOT MERIT ENERGY ISOLATION.

- **IMPLEMENT ACTION PLAN (VEHICLE STABILIZATION)**

- Apply four points of contact under the A and C pillars of the vehicle if the vehicle is on all four wheels. Avoid deep contact points that would apply point load pressure to the floor pan of the vehicle. This could result in physical abuse of the battery pack.
 - A rollover or collision resulting in unnatural resting position of the vehicle will require advanced stabilization techniques in accordance with AHJ SOP's. Avoid contact with the floor pan of the vehicle that could result in point load pressure and physical abuse of the battery pack. Back tie techniques and less reliable contact points such as control arms, wheels, and suspensions may be required as anchor points to avoid battery pack abuse.
 - Focal points for undercarriage contact should be the OEM's engineered lifting points located near the frame rails and rockers under the A pillars and Posterior (B or C) pillars.
 - Electric vehicles are heavier than similar sized internal combustion engines. Do not exceed rated equipment capabilities.
- **IMPLEMENT ACTION PLAN (VEHICLE EXTRICATION)**
 - Charging ports, low and high voltage batteries, high voltage cables, and high voltage components with capacitors should be located and identified and avoided at all costs. Any direct contact may result in arc flash or arc weld with tool contact. Inadvertent displacement of any High Voltage components may also result in energy hazards which may lead to arcing events, short circuits, and thermal runaway.
 - Ultra-High Strength Vehicle structures produce extreme reactions in hydraulic extrication tools that may produce violent shifting or relocation of the tools. First Responders should exercise added caution and safe physical positioning when performing extrication techniques with hydraulic tools to avoid injury from tool shifting and high resistance cutting responses.
 - Extrication procedures should be performed in accordance with AHJ SOG's.
 - **Disperse gases from the high voltage battery using a fog pattern until firefighters and occupants can be removed and moved away from the vehicle .**
- **IMPLEMENT ACTION PLAN (FIRE OPERATIONS)**
 - Standard response package for known EV fires should be 2 Engines and a hazmat unit, or unit that has air monitoring capabilities.
 - 2 Engines – fire attack and water supply. Hazmat/air monitor capable unit
 - A size up of vehicle fire and possible exposures shall be completed upon arrival.
 - If the vehicle is off gassing, smoking or actively burning, identify the source of the event. Battery based fires will produce products of combustion through the engineered vent points of the battery pack or the paths of least resistance. This will typically originate from the vehicle undercarriage.
 - Identify if the EV is off gassing or in actual thermal runaway and apply correct actions after size up.
 - Incomplete combustion of Li Ion battery gas contains toxic gasses that may result in serious injury or death if inhaled. Full PPE and SCBA shall be worn in these conditions.
 - Water shall be the primary suppression application. Multi class extinguishing agents designed to encapsulate or emulsify shall only be deployed if access to the battery compartment is available. Traditional foam should be avoided.

- An initial attack shall consist of no more than 1000 gallons of water. If the fire is not extinguished after 1000 gallons of water a new size up will be conducted.
- If after 1000 gallons has been used and there is no threat to exposures, the vehicle should be left to burn with an adequate hot zone established to ensure firefighters and the public are not exposed to the smoke.
- DO NOT APPLY WATER to early off gassing that is not combusting.
- ALLOW THE VEHICLE TO BURN if the following conditions exist:
 - Fully involved fire will not create an imminent life safety hazard.
 - Exposures can be adequately protected, and/or the vehicle can be removed from an exposure.
 - Exposures include but are not limited to: Residential homes, apartment, commercial structures, bridges, overpasses, and commercial parking garages. Lithium-ion battery fires burn up to 4,000 degrees F. This can cause failure of non-combustible building materials including bridges and parking garages.
 - If an EV is within a garage or charging station, suppress the fire with a “fire blanket” until the vehicle can be removed from the exposure.
 - If the EV fire is in a commercial parking garage and is an “enclosed” garage, the occupants above must be evacuated if a safe smoke free route is available. If the EV fire is in an “open” parking garage, The occupants can be sheltered in place. (refer to special considerations section)
- Consider Suppression efforts if the above conditions are not met.
 - Recommend the use of an attack line for vehicle fire and an additional line for exposure protection.
 - Initial attack may be more than 1000 gallons if the EV cannot be removed from the exposure.
- If an EV is involved in fire while connected to the charging station, attempt to find the shutoff and cut power to the charging station. An electrical hazard may exist and manually removing the charger from the port is not recommended. Charging stations can be up to 1000 volts DC.
- Ensure adequate water supply is available to support fire suppression operations. Continuous flow may be required for up to eight hours.
- Rapid attack lines should be deployed initially for rapid extrication attempts or aggressive offensive attacks designed to knock the initial fire down.
- Extended suppression efforts will require appropriate water supply, primary and secondary lines, back up lines, and remote water monitors in accordance with the AHJ SOP's.
- Effective suppression efforts require Direct Cooling of the Li ion batteries. This is only accomplished with water penetration to the interior of the battery pack enclosure. Controlled streams should be directed into the vent points or breaches in the battery pack.
- Reposition the vehicle in accordance with AHJ SOPs for vehicle lifting and stabilization to optimize access to the vent or breach points of the battery pack.
- Repositioning of the vehicle through lifting and stabilization techniques will require streams to be directed at the fire for the purpose of protecting personnel and equipment in the direct path of the fire and gas.
- Suppression operations may produce much higher volumes of non – combusted gas and environmental/atmospheric management should be implemented.
- A fire not involving the high voltage lithium-ion battery should be extinguished to keep it from extending to the battery pack. Suspect damage to the high voltage battery and

follow the hazard management section of this SOG.

- Suppression operations may also produce water shed that is hazardous and requires containment and mitigation. Appropriate environmental management and EPA coordination should be implemented in accordance with AHJ SOP's.
- Adequate suppression and extinguishment will be confirmed by a continuous decline in thermal condition of the battery pack as well as the decline of CO in the off gas. This is not an indication of absolute containment. Stranded energy may still be present in the vehicle with unvented battery cells and secondary thermal runaway is highly probable.
- Vehicles should not be transferred down the chain of custody or relocated until stable conditions are present for a minimum of one hour.
- Movement of the vehicle, post incident, also creates a high probability of secondary thermal event. Movement of the vehicle post incident by First Responders or Second Responders (Tow and Recovery professionals) should be guided by the ESA in accordance with SAE J2990 Risk Assessment recommendations. Consider having fire apparatus escort vehicle to salvage yard.

- **IMPLEMENT ACTION PLAN (SUBMERGED OR FLOOD DAMAGED VEHICLES)**

- Vehicles fully submerged should only be accessed by qualified public safety or salvage divers in accordance with the AHJ SOP's.
- ESA guidance (855-ESA-Safe:855-372-7233) should be sought for Dive based access, rigging, and removal of the submerged vehicle.
- Electric Vehicles may experience thermal events while submerged. This will be identified through the presence of gas emanating from the surface of the water and active fire bursts under the surface of the water. Divers and First Responders should not enter the water if the vehicle is experiencing an active event while submerged.
- Once the vehicle is removed from the water, it should be propped up to allow water to drain from the vehicle. The vehicle should be monitored for heat and off gassing. The vehicle should be labeled with a risk identification sticker prior to being turned over to the tow company. There is a high probability that the vehicle will experience a thermal event upon removal from the water. First responders should establish fire operations action plans upon vehicle removal.

- **POST INCIDENT MANAGEMENT**

- First Responders should properly label the vehicle with the risk identification sticker or equivalent and encourage tow and recovery professionals to complete a risk assessment. Battery components or debris shall be managed by First Responder personnel or professional hazard mitigation personnel. Thermal Imaging Cameras, Four Gas meters, and Full PPE and SCBA shall be utilized when handling separated high voltage materials. Nonconductive tools such as plastic scoop shovels should be used to secure separated materials.
- Damaged batteries may be unvented and fully energized and pose significant risk to First and Second Responders. If displaced batteries appear unvented, thermal imagery should be used to detect cell temperature. Any isolated cells exceeding 200 degrees f should be cooled immediately with water through vessel submersion or direct flow. Seek ESA guidance if the scenario presents itself.
- Seek ESA guidance when performing material clean-up operations.
- This process includes DOT and EPA compliant handling, removal and transport of battery materials and should only be performed with ESA guidance or Haz Mat Specialist

equivalent.

- Share information with the towing company that this is an EV with the possibility of re-ignition and the need to be separated by at least 50 feet from any other vehicles or combustibles, such as buildings. Share ESA's recommended towing and storage guidelines with area towing companies.
- Perform gross decon at the scene, all PPE will later need thorough decontamination in a washer/extractor or per the manufacturer's specification before being placed back into service. Consider having the PPE commercially cleaned.
- Use fluorine paper to determine if gear is thoroughly decontaminated.

- **SPECIAL CONSIDERATIONS**

- **VEHICLE CONFINEMENT (PARKING GARAGES, PARKING LOTS, VEHICLE ENCLOSURES)**
 - These environments may require rapid isolation of combustible gasses and fire to prevent fire spread to exposures and accumulation of combustible and toxic gas. Gas clouds (smoke) emanating from EV's should always be perceived as highly toxic and highly combustible until determined otherwise through atmospheric monitoring.
 - First Responder should consider deployment of EV Fire blankets on the involved vehicle in accordance with the manufacturer's recommendations. Fire Blankets should be deployed as temporary containment tools that are not designed to stop thermal runaway. First Responders should be prepared to manage fuel rich gas products that have developed under the blanket when the blanket is removed. This removal process may result in combustion of the released gasses and should be addressed with water stream application.
 - Adjacent exposures such as other vehicles or mobile objects can then be relocated away from the fire source.
 - Structural elements such as pre and post tensioned concrete decks, walls, or ceilings made of combustible materials should be aggressively protected with fire streams to reduce the risk of collapse and fire spread.
 - Ventilation and Gas monitoring may be necessary to safely manage atmospheric conditions in accordance with the AHJ SOP's
 - Consider hydraulic ventilation tactics through hand line applications to produce venturi effects and add water weight to the gas in highly pressurized environments with unfavorable natural ventilation.
- **COMMERCIAL VEHICLES (BUSSES, SEMI TRACTORS, COMMERCIAL VANS, BOX TRUCKS)**
 - Contact ESA for guidance regarding vehicle interaction requirements. Commercial vehicle systems have more complexities related to integrated suppression and detection systems, braking, and energy isolation. Additionally, battery packs may be located on the roofs of the vehicle and highly reinforced compartments. Roof top packs may require elevated streams for proper suppression applications.
 - **USE CAUTION** when accessing or opening compartments that contain Li-ion batteries. Combustible and toxic gas may be contained in a fuel rich state within these compartments and produce highly combustible/explosive conditions when accessed. All compartment spaces that may potentially be compromised should be monitored with 4 gas meter probe in FULL PPE and SCBA prior to opening.
 - Commercial Vehicle electric parking brakes may be compromised due to damage and First and Second Responders should apply appropriate wheel chocks and potential anchoring to prevent undesired vehicle movement.

- **CHARGING STATIONS**
 - Electrical vehicles that are plugged into a charging station and require First Responder interaction should be unplugged or disconnected from the charging station. Call ESA for guidance.
 - In the case of fire, off gas, smoke, audible signs of electrical damage, submersion or collision while plugged in, charging stations should be isolated remotely through charging station electric panels, E Stops, or identified breakers. Lock out/tag out procedures should be followed in accordance with the AHJ SOP's.
 - Home charging stations can be 7kw to 22kw AC
 - Commercial fast charging stations are minimum 480 volts to 1000 volts DC.
 - Charging stations may have built in battery packs – ESS
 - Notify charging station owner.
 - Notify electrical company.
- **STRUCTURE FIRE (Hybrid and Electric Vehicles as an exposure and fire source)**
 - Tactical priorities should include the mitigation of fire spread to the garage or area where the electric vehicle is located. This may include defensive fire stream positioning or vehicle removal/relocation.
 - First Responders should exercise extreme caution when making entry on residential structure fires where the hybrid or electric vehicle is involved. The presentation of dense, white smoke (gas) should be an immediate indicator to consider the presence of lithium-ion battery gas. This gas has high concentrations of CO and hydrogen which may result in flash over or gas explosion. This can produce intense fire, shrapnel, and flying debris up to and including complete overhead door displacement.
 - Consider pulling the Electric Vehicle out of the garage or residence to remove and vent the hazard.
- **DAMAGED VEHICLE COLLECTION POINTS (Salvage Yards, Tow Yards, Evidence Impound Lots)**
 - All damaged hybrid and electric vehicles should be isolated with 50' boundaries from all combustibles or with isolation barriers on three sides. These barrier specifications are set in accordance with SAE J2990 and should be enforced by the AHJ to prevent large scale conflagrations or exposure and life safety hazards within the jurisdiction.

5. Training plan and measures of competency

Recommend TEEX CEF 102 Electric Vehicle (EV) Safety for the First Responder course

<https://teex.org/class/cef102/>

Recommended ESA Annual Awareness Course (Refresher for recurring) for all fire personnel and LE

Recommended ESA Annual Operations Course (Refresher for recurring) for all Rescue/Haz Mat personnel

Recommended ESA Tow and Recovery Course for all contracted Tow and Recovery agencies.

All personnel should perform academic and practical exercises completing KSA's and JPR's established by the AHJ in accordance with this SOP.

6. Hazardous considerations

- **Signs of Thermal Runaway:**
 - **Sight:** White smoke or gas, Fire, Arcing
 - **Sound:** Arcing, Hissing, or Popping of battery vent due to pressurized release of gas within the battery cells
 - **Smell:** Electrical burning odor with a “sweet” undertone.
- **First Responders who are exposed to Li-Ion battery gas should be evaluated for potential toxic inhalation exposure.**
- **First Responder PPE ensembles do not provide adequate protection against prolonged direct flame exposure to battery-based fire production. Battery Flames may extend 6 – 10 feet from the battery pack and will have a blowtorch presentation. Direct exposure may result in significant burns.**
- **Environmental conditions may be significantly impacted by incomplete combustion of Li-ion battery gas and careful risk/benefit analysis should be conducted before initiating suppression efforts. Indirect cooling or inadequate water supply and improper stream direction will likely extend the event significantly and produce a much larger impact environmentally and atmospherically.**
- **Direct contact with high voltage components may result in arcing events and electrocution.**
- **Secondary thermal events are highly probable, and First Responders should strongly consider escort operations for tow and recovery professionals transporting hybrid and electric vehicles that have been submerged or experienced a thermal event.**
- **Li-ion batteries may produce off gassing that cannot initially be seen with the naked eye. Thermal imaging cameras are essential to early visual detection of off gassing and four gas meters indicating CO production and LEL.**
- **Li-ion batteries may ignite with little warning through rapid, pressurized releases of combustible gas. First Responders should always wear FULL PPE with SCBA and exercise extreme caution when interacting with heavily compromised hybrid and electric vehicles with hazardous presentations.**

7. References, related resources, and acknowledgments

DEFINITIONS:

- **EV/BEV: Electric vehicle/battery electric vehicle-**Any vehicle that uses electric motors, either in full or in part, as propulsion.
- **HEV: Hybrid electric vehicle-**A car that integrates a small battery and an electric motor to enhance the efficiency of the engine. The ICE (internal combustion engine) maintains the battery’s charge. It cannot be charged by plugging into an electrical supply. Hybrids can travel short distances on electric power only.
- **PHEV: Plug-in hybrid electric vehicle-**A vehicle configured like a traditional hybrid, but with a bigger battery pack that can be charged by plugging into an electrical source. This vehicle can start a trip on electric-only propulsion after being plugged in and can usually travel further on battery-only as HEV.
- **Li-ion/LITHIUM-ION BATTERY:** The current chemistry standard in electric vehicle batteries which offers the needed energy density, power, and fast charging capability.
- **1st RESPONDER CUT LOOP/CUT LOOP/FIREFIGHTER CUT LOOP:** A low voltage harness loop that, when cut, is designed to isolate the high voltage power to just the battery pack.

- **BATTERY CELL:** The smallest unit of the battery pack. They are individual single cells designed as either a cylindrical, pouch, or prismatic or combination depending on the manufacturer. If the cylindrical battery pack housing is damaged these cells can become dislodged or even ejected in a severe collision.
- **BATTERY MODULE:** A module can contain several hundred battery cells. The module design allows for electronic battery management thermal control and allows for greater capacity by using space more efficiently.
- **BATTERY PACK:** All the components of energy storage for a vehicle. The pack contains all the modules (which include the individual cells) used to store energy. Depending on the vehicle manufacturer and vehicle type the battery pack can be used as a structural member of the vehicle's body on many cars. Additionally, on most EVs the battery pack is located on the bottom of the vehicle and will run the length of the car between the axles. On HEVs and PHEVs, the battery pack location varies but mostly could be found towards the vehicle's rear (under or behind the back seat or in the trunk).
- **DC/DC Converter:** Converts Voltage from one range to another.
- **DRIVETRAIN:** System of components used to transfer power from the engine/motor to the wheels.
- **REGENERATIVE BRAKING:** Process whereby energy is generated by the motor during deceleration and is used to charge the battery.
- **BATTERY MANAGEMENT SYSTEM(BMS):** A system of components used to monitor and control the charge, discharge, and temperature of the battery cells.
- **Thermal Runaway:** Thermal runaway is a chain reaction within a battery cell which an increase in the temperature of a lithium-ion battery can cause a further increase in temperature, causing an exothermic reaction leading to the release of flammable gas and the potential for an explosion. It is caused by the pressure created from the build-up of heat in the battery, which can be due to mechanical, electrical, or thermal abuse. Things like excessive current, internal short circuits, external heat sources, puncturing, or flame impingement.
- **CO (Carbon Monoxide):** Is a colorless, poisonous, odorless, tasteless, flammable gas that is slightly less dense than air. CO is an incomplete product of combustion.
- **H (Hydrogen):** Is colorless, odorless, tasteless, non-toxic, and highly combustible gas. H is a natural element found in water and air
- **RAP (Risk Assessment Placard):** An assessment sticker from the ESA which provides the level of risk provided by the ESA for proper handling and management of the vehicle.
- **AUTHORITY HAVING JURISDICTION (AHJ)** - an organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure
- **KNOWLEDGE SKILLS ABILITIES (KSA)** - necessary for the successful performance of a position are contained on each job.
- **JOB PERFORMANCE REQUIREMENT (JPR)** - combining of the expected behavior, the description of the tools, equipment and materials, conditions of the performance and the identified outcome.
- **DIRECT COOLING** - apply water directly onto the burning materials. Ex. Directing a water stream directly into an opening in a battery pack to cool the individual cells inside it.
- **INDIRECT COOLING** – applying water in an area with the intentions to cool the environment without direct contact to the intended target. Ex. Directing a water stream onto an exposure to prevent thermal damage or auto exposure.

9. Resources

855 ESA SAFE / (855-372-7233)

www.energysecurityagency.com Take a photo of the attached QR code and open the “app” link.

Save the “app” to apparatus tablets and cell phones for rapid ES.



First Responder RAP Stickers should be produced and positioned. The stickers placed on the windshield or other available vehicle location. The first responder should be advised to call the ESA to conduct Risk Analysis.

This is critical to the chain of custody and risk reduction for

RISK ANALYSIS REQUIRED
RISK ANALYSIS REQUEST PLACARD - RARP

PLACE RAP STICKER OVER THIS STICKER BETWEEN DOTTED LINES

The Authority Placing this Notice & Energy Security Agency
Have Determined this Vehicle May Present a Risk of
Shock, Electrocution and/or Fire

**HAZARD LEVEL
NOT DETERMINED**

TOWING/RECOVERY NOTICE


Follow OEM Recommendations for Transport

Limit vehicles movement only to transporting to
a safe location until Risk Analysis is complete

Monitor vehicle for smoke, fire, or arcing until
Risk Analysis is complete

Do not handle high voltage components


Call ESA for Risk Analysis of the Vehicle as soon
as the vehicle is in a safe location

**CALL THE ESA**
1-855-ESA-SAFE OR 1-855-372-7233
PLACE RAP STICKER OVER THIS STICKER BETWEEN DOTTED LINES

(REQUESTING PARTY)

Alternative Fuel Emergency Response Guides

Visit the *Resources* tab for three ways to easily look up make, model, and manufacturer information in the field:

1. Emergency Response Guides from the National Fire Protection Association (NFPA) 
2. Boron Extrication Website
3. Electric Vehicle Rescue (EVR) Phone App Website



To download the EVR app, scan the code with your phone camera.



