

# *National Fire Protection Association*

## ELECTRIC & HYBRID VEHICLE SAFETY

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Division Manager  
Public Fire Protection Division



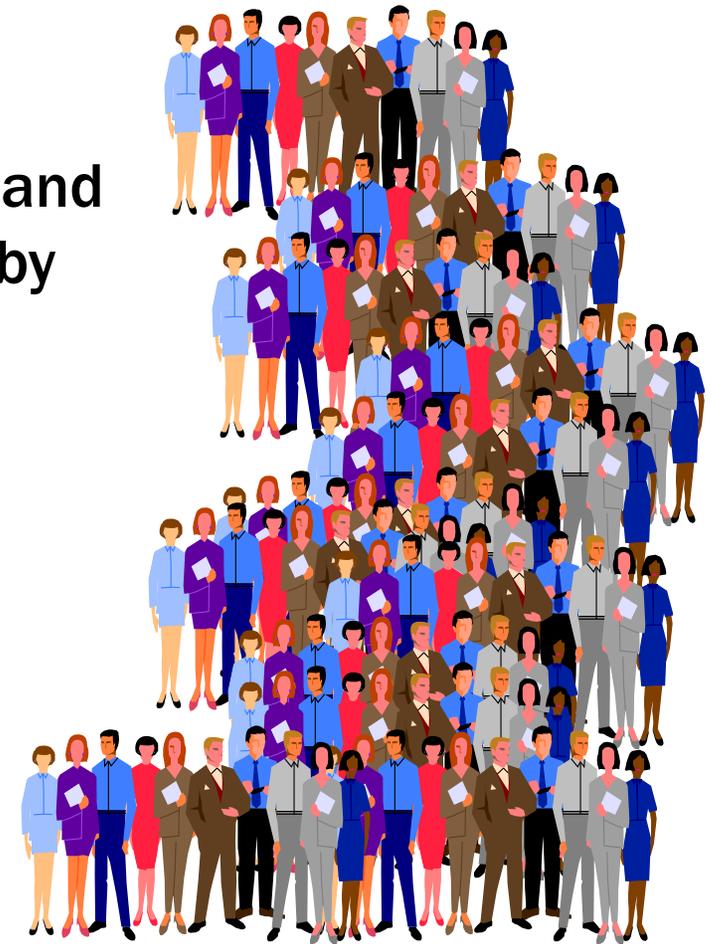
# National Fire Protection Association



## NFPA Mission:

Reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating ...

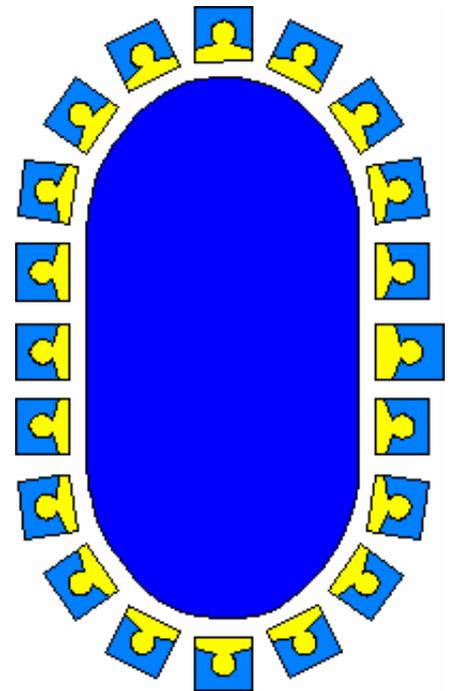
- Consensus codes & standards
- Research
- Training and
- Education



# The NFPA Codes & Standards Process



- ANSI Accredited
- 300 codes and standards developed by approximately 250 technical committees
- Populated by ~8000 TC volunteers
- NFPA documents often used in regulations
- Due process, transparency, balance
- Free on line access, [www.nfpa.org/freeaccess](http://www.nfpa.org/freeaccess)



# Standards



- **5 First Responder**
  - Training
  - Safety & Health
  - Protective Clothing & Equipment
- **9 Aircraft Rescue & Fire-Fighting (ARFF)**
  - Operations/Planning/Assessment
  - Personal Qualifications/Proficiency
  - Vehicles & Equipment
- **National Electric Code (NEC)**
  - Adopted all 50 states
  - Interior wiring
  - Electric Vehicle Charging Stations

# Related Activities



- SAE J 2990 , Hybrid and EV First and Second Responder Recommended Practice
- ANSI Electric Vehicle Standards Panel (EVSP)
- NFPA Responder Training
- Assist National Highway Transportation Safety Administration (NHTSA) with Interim Responder Guidelines
- Data Analysis
- Fire Protection Research Foundation (FPRF)

# Research



**National Fire Protection Association  
Fire Analysis and Research Division**

[www.nfpa.org/OSDS](http://www.nfpa.org/OSDS)



**THE  
FIRE PROTECTION  
RESEARCH FOUNDATION**  
*Research in support of the NFPA mission*

[www.nfpa.org/foundation](http://www.nfpa.org/foundation)

# Fire Protection Research Foundation

- **Lithium Ion Battery Assessment**
- **Evaluation of Power Rescue Tools**
- **Electric Vehicle Charging and Electrical Safety Codes and Standards**
- **Fire Suppression for Lithium Ion Battery Storage**
- **Electric Vehicle Safety Summits**
- **Workshop on Emergency Responder PPE for Electric Vehicle Events**



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# Current Research

- **Best Practices for Emergency Response to Incidents Involving Electric Vehicle Battery Hazards**
  - Funding partners DOE, DOT, AAM
  - Focus on manual fire suppression related concerns
  - Test burns held last week



*National Fire Protection Association*

ELECTRIC & HYBRID  
VEHICLE SAFETY  
TRAINING FOR  
EMERGENCY  
RESPONDERS



48 States  
Trained

2,500+ Trainers

33,000+ Fire  
Service  
personnel  
trained



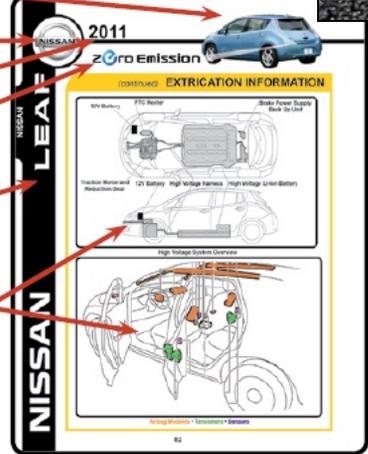
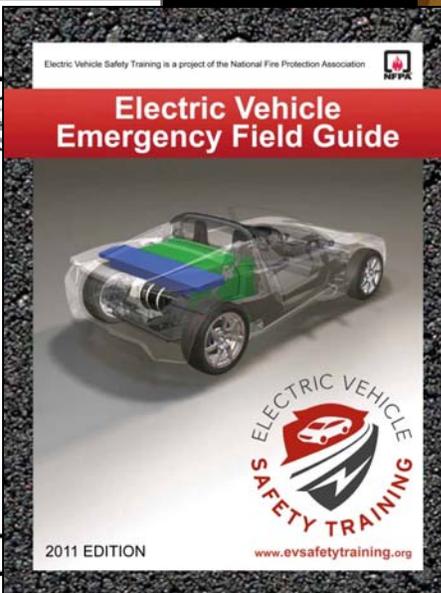
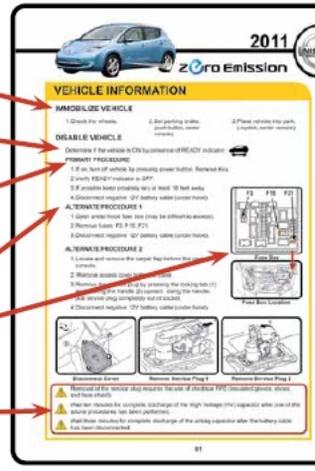
[www.EVSafetyTraining.org](http://www.EVSafetyTraining.org)

# NFPA's Emergency Field Guide



**HOW TO USE THIS GUIDE**

- Immobilization
- How to Determine if Vehicle is ON / OFF
- Primary Disabling Procedure
- Alternate Disabling Procedures
- Disabling Procedure Supporting Diagrams
- WARNINGS
- Vehicle Photo
- Manufacturer Badge
- Model Year Range
- Vehicle Badging
- Make and Model Tab
- System Diagrams (High Voltage, Airbags, SRS—if Available)



# Partnerships

Alliance of Auto Manufacturers (AAM)  
Association of Intl Auto Manuf. (AIAM)  
20 Auto Manufacturer Partnerships

General Motors	Honda
Ford	Mitsubishi
Toyota	Chrysler
Nissan	Volkswagen
Porsche	BMW
Hyundai	Kia
Tesla	Mercedes
Mazda	Alt-e
VW	Azure
Fisker	Coda



# NHTSA Interim Guidance



U.S. Department  
of Transportation  
National Highway  
Traffic Safety  
Administration



DOT HS 811 574

January 2012

## Interim Guidance for Electric and Hybrid-Electric Vehicles Equipped With High Voltage Batteries

**For More Information:**

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