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155769

BASIC COURSE INSTRUCTOR UNIT GUIDE

41

HAZARDOUS MATERIALS

February 1995

155769

U.S. Department of Justice
National Institute of Justice

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THE COMMISSION
ON PEACE OFFICER STANDARDS AND TRAINING

STATE OF CALIFORNIA

The curriculum contained in this document is designed as a *guideline* for the delivery of performance-based law enforcement training. It is part of the POST Basic Course guidelines system developed by California law enforcement trainers and criminal justice educators in cooperation with the California Commission on Peace Officer Standards and Training.

UNIT GUIDE 41

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CURRICULUM

I. INTRODUCTION TO HAZARDOUS MATERIALS

A. Defining hazardous materials and hazardous materials incidents

1. A hazardous material as defined by the Environmental Protection Agency (EPA) is a material which, due to its concentration, quantity or chemical or physical properties may cause or significantly contribute to:

   a. An increase in mortality

   b. An increase in serious, irreversible or incapacitating reversible illness

   c. A substantial present or potential hazard to human health or the environment when improperly managed

2. A hazardous material as defined by the United States Department of Transportation (DOT) is any substance or material in any form or quantity which poses an unreasonable risk to safety and health and property when transported in commerce and only applies to the transportation of hazardous materials.

3. The most practical definition of a hazardous material coined by Dr. Ludwig Benner from the National Transportation Safety Board is "Something that jumps out of its container when something goes wrong and hurts or harms the thing it touches."

4. A hazardous material incident is defined as an emergency involving the release or potential release of a hazardous material.

B. Responsibilities of a peace officer at a hazardous materials incident:

1. General responsibilities of a peace officer at the scene of a hazardous materials incident

   a. Assuming initial command

   NOTE: It is crucial for the peace officer to resist the natural temptation to "rush in" to the situation.

   b. Initiating the incident command system

   c. Establishing a perimeter (isolate and deny entry)

   d. Maintaining ingress/egress control

   e. Initiating proper notifications

2. An officer's effectiveness in successfully responding to a hazardous material incident will be dependent upon:

a. Training

b. Capability

c. Resources

3. Considerations regarding the assumption of initial command at the scene of a suspected or possible hazardous materials incident

a. It is crucial for the initial responding officer to assume preliminary command of a hazardous materials incident.

b. The first officer on the scene must make an initial assessment of what resources are needed and verify the nature of the incident. This will include:

(1) Quickly confirming the location and apparent extent of the area affected

(2) Determining the safest route for other responding units

(3) Providing a brief, updated broadcast

(4) Attempting to locate persons who have information as to the source or extent of the problem

(5) Determining the potential for additional problems (e.g. fire, medical, secondary explosions, etc.)

(6) Determining a suitable location for a preliminary command post

NOTE: It is important for the officer to bear in mind that an official event record or "log" should be maintained. It will be extremely important after the incident to detail specific actions taken at the scene and to identify any persons or resources that were present. As with any law enforcement event, comprehensive documentation is essential.

C. The overall purpose of this course is to provide the student who is likely to be a First Responder with an improved capability to respond safety and competently to hazardous materials events within the typical resource and capability limitations at the "Awareness" level.

D. Understanding First Responder levels

1. There are two levels of First Responders.

a. First Responder "Awareness" level

b. First Responder "Operations" level

2. The First Responders at the "Awareness" level are individuals who:

a. Are likely to witness or discover a hazardous materials release

b. Have been trained to initiate an emergency response sequence by notifying the proper authorities of the release

c. Take no further action beyond notifying the authorities of the release

3. The First Responders at the "Operations" level

a. Personnel involved in an initial response for the purpose of protecting people, property and the environment from hazardous substances

b. Trained to respond defensively instead of actually trying to stop the release at the source.

c. This type of response involves working at a distance from the point of release to control the released material, keep it from spreading and prevent exposures.

E. Understanding the magnitude of the hazardous materials problem

1. Common use and misuse of hazardous materials

a. There are two constant elements of the hazardous materials problem.

(1) Proliferation in the production and use of hazardous materials

(2) The human element in misusing those hazardous materials

b. Hazardous materials are **everywhere** due to society's dependence on a high standard of living.

(1) Hazardous materials are generated, manufactured, used, stored and hazardous waste disposed of, in most communities.

(2) The proliferation of the petro-chemical industry since World War II has caused a tremendous increase in the development and use of hazardous materials.

(3) According to the California Specialized Training Institute, 250,000,000 tons of hazardous chemicals were produced in 1985. This equals approximately one ton per each citizen living in the United States.

(4) Hazardous materials are transported during all phases of their "cradle-to-grave" existence.

(5) Modes of transportation

(a) Highway - One in every 20 commercial trucks transport hazardous materials.

(b) Rail - One in every 10 railcars transport hazardous materials.

(c) Marine - More hazardous materials pass through Los Angeles/Long Beach as a port-of-entry than any other deep-water port on the West Coast.

(d) Air - Although severely restricted regarding types and quantities of hazardous materials that can be transported, aircraft have their own inherent hazards (e.g., large quantities of fuel).

(e) Pipeline - Second largest bulk carrier of hazardous materials (A 14-inch pipeline contains 42,000 gallons per mile.)

c. Hazardous materials are regulated by a variety of sources.

(1) The United States Department of Transportation (DOT) regulates approximately 2,700 identified materials.

(2) The Federal Environmental Protection Agency (EPA) regulates approximately 400 identified substances and wastes.

(3) The State of California regulates approximately 800 identified substances and wastes.

F. Hazardous material incidents

1. A hazardous material incident is defined as an emergency involving the release or potential release of a hazardous material.

2. A hazardous material incident requires some type of emergency response action.

3. Many incidents are catastrophic and endanger entire communities.

NOTE: Instructors may wish to use a variety of case studies or other examples of hazardous materials incidents, particularly those that have occurred within the geographical area serviced by the academy.

4. Although some incidents may not appear visually spectacular, they still possess the potential for catastrophic consequences.

EXAMPLE: The release of methyl isocyanate in Bhopal, India was responsible for the deaths of over 2,000 people. This incident started as a vapor release that was never expected to cause deaths. This incident was also a benchmark event in the genesis of hazardous materials management programs worldwide.

NOTE: Instructors may wish to reference examples of apparently minor incidents which ultimately caused injury or death or substantial environmental damage.

5. Incidents do not have to endanger humans to be disastrous.

EXAMPLE: In 1991, a railway tank car containing metamsodium derailed and caused significant environmental damage to the Sacramento River in Northern California. Although there was no loss to human life, there have been claims of continuing health problems by area residents.

II. SPECIAL CONSIDERATIONS FOR RESPONDING TO HAZARDOUS MATERIALS INCIDENTS

A. A law enforcement response to a hazardous materials incident must be characterized by actions which are:

1. Deliberate and planned
2. Systematic and methodical
3. Cautious and safely executed

B. A cautious and systematic response is essential due to:

1. Difficulty in identifying the material
2. Potential health effects on the human body
3. Environmental impact
4. Public safety implications
5. Multiplicity of the hazard (e.g. toxic, flammable, reactive, radioactive or corrosive hazards, physical hazards, etc.)
6. Complexity of the situation (e.g. rescue problems, fire, flood, explosion, closures of major thoroughfares, closures of business, etc.)

C. A hazardous materials incident requires additional coordination because of the multidisciplinary response involving:

1. Fire service
2. Additional law enforcement resources (e.g. mutual aid)
3. Emergency medical service
4. Public/environmental health
5. Public works (e.g. city, county, state or other resources)
6. Private sector representatives
7. Other governmental agencies (e.g. Cal Trans, Fish and Game, military, etc.)

D. A hazardous material incident involves a greater potential for illness, injury or death than most other emergencies.

1. Hazardous materials inherently produce some adverse effects on the human body or the environment.
2. The typical peace officer will not have appropriate protective clothing, equipment

and training to respond to a hazardous materials incident beyond the **awareness** level.

III. LEGAL ASPECTS OF HAZARDOUS MATERIALS

A. Federal laws and regulations

1. The Code of Federal Regulations addresses a number of issues relating to hazardous materials including incident response, safety protocols, training standards and transportation issues. For example:

   a. 29 CFR addresses issues relating to worker safety.

   b. 40 CFR addresses a number of environmental laws pertinent to hazardous materials and hazardous waste.

   c. 49 CFR addresses issues relating to transportation. (e.g. shipping, placarding, etc.)

2. Federal criminal violations relating to hazardous materials

   a. Generally, California peace officers will enforce state statutes rather than federal criminal violations.

   b. Federal criminal violations will generally become an issue for incidents that occur on federal lands or areas of concurrent jurisdiction. (e.g. A hazardous materials spill into the bay may be a local issue or become a federal issue.)

B. State laws and regulations

1. Regulations relating to incident response, handling, transportation and disposal

   a. California Vehicle Code Section 2454 addresses incident command authority for on-highway hazardous material incidents.

   b. California Vehicle Code Section 2453 requires the person responsible for a spill to make appropriate notifications

   c. California Code of Regulations addresses a number of issues relating to hazardous materials including incident response, safety protocols, training standards and transportation issues. For example:

      (1) Title 8 CCR addresses issues relating to worker safety.

      (2) Title 22 CCR addresses a number of environmental laws pertinent to hazardous materials and hazardous waste.

      (3) Title 13 CCR addresses issues relating to transportation. (e.g. shipping, placarding, etc.)

   NOTE: The California Code of Regulations essentially mirrors the Code of Federal Regulations regarding hazardous materials.

2. State criminal violations relating to hazardous materials

a. There are a variety of criminal violations included in the California Health and Safety Code which have been enacted under the general umbrella of the California Hazardous Waste Control Act. Examples include:

(1) Health and Safety Code Section 25189.5 (b) - Illegal Disposal of Hazardous Waste at a Location Which Has No Permit (felony with provisions for fines up to $100,000)

(2) Health and Safety Code Section 25189.5 (d) - Illegal Treatment or Storage of Hazardous Waste (felony with provisions for fines up to $100,000)

b. Health and Safety Code Section 25507 - Failure to Immediately Report Release or Threatened Release of a Hazardous Material (misdemeanor with provisions for fines up to $25,000 per day)

c. Penal Code Section 374.8 (b) - Knowingly Causing any Hazardous Substance to be Deposited Upon any Road or Property of Another Without Permission (felony with provisions for fines up to $10,000)

NOTE: A list of selected California environmental criminal laws is included in the supporting materials section of this instructor unit guide. The list also addresses fish, game, medical waste management, radiation control, food and agriculture (pesticides) issues. Many of these violations identify fine amounts which can be used as a means of cost recovery for jurisdictions that have incurred expenses as a result of a hazardous materials incident or environmental crime.

C. Local laws and regulations

1. Counties, cities and special districts may also promulgate laws and regulations regarding hazardous materials.

2. There can be substantial differences among communities regarding hazardous materials management. As a result, officers must become familiar with the laws and regulations in effect within their jurisdiction.

D. Civil liability considerations

1. Failure to plan, train or take accepted response actions could result in civil liability actions against a public agency and/or criminal actions against an individual, usually the chief executive officer, the incident commander, etc.

2. An individual officer may be subject to punitive damage when their action or inaction is deemed to be deliberately negligent. (e.g. the officer inappropriately exceeds the scope of their training or the officer fails to act appropriately)

3. An officer may be considered presumptively negligent if they violate their department's hazardous materials incident response policy.

4. The best defense to civil liability is:

a. Good planning

b. Training

c. Operational critiques (post-incident analysis)

d. Following standard recognized practices

e. Documentation

f. Using a "reasonable person" approach and prudent response actions (a safe and competent response within the person's level of training, resources and capabilities)

IV. DANGERS OF HAZARDOUS MATERIALS

A. It is important for the first responder to understand how exposure to hazardous materials can affect the health and safety of both victims and response personnel. It is also important to understand that many hazardous materials have multiple hazards. (e.g. Acrolein is a material that is both flammable and poisonous. Gasoline is a material that is flammable, poisonous and carcinogenic.)

B. Usually the greater the exposure, the more severe the health effects. The effects generally depend on length of exposure and concentration of the hazardous material.

C. First responders must understand how hazardous materials can enter the body and how to protect themselves from exposure. The four routes of exposure are:

1. Inhalation

   (a) Inhalation of hazardous materials is the leading cause of injuries to first responders.

   (b) Exposure via this route can result from the following:

      (1) Approaching the scene from downwind or in an unsafe manner

      (2) A shift in wind direction

2. Ingestion

   (a) Because of the way the digestive system works, the human body has some ability to fight off toxins entering by this route.

   (b) The best defense is to avoid eating, drinking or smoking at the scene.

   (c) Prior to leaving the scene, proper hygiene such as hand and face washing is recommended.

3. Absorption

   (a) This is a serious problem since many extremely toxic substances can enter the body through the skin or eyes.

   (b) Equipment and/or clothing may have to be disposed of or decontaminated.

   (c) Once again, hand and face washing is recommended.

4. Injection

   (a) This is the least likely route of entry, but injection is a real possibility at all incidents.

   (b) Sharp objects can easily puncture protective clothing and the skin.

D. Exposures

1. There are two types of exposure - short-term and long-term.

   a. Short-term exposure is a one-time limited or brief exposure.

      (1) The effects of a short-term exposure can range from no effect to death within minutes. The substance to which an individual is exposed could cause, but is not limited to:

         (a) Burns

         (b) Vomiting

         (c) Dizziness

      (2) Responders generally are more concerned about short-term exposures.

      (3) Short-term exposures to certain hazardous materials can lead to chronic health effects. (e.g. asbestos, carcinogens, etc.)

   b. Long-term exposure is a continuous, repeated or prolonged exposure.

      (1) The effects from long-term exposure can pose serious problems because they may not present themselves for many years.

      (2) The effects from long-term exposure can include but are not limited to:

         (a) Cancer

         (b) Birth defects

         (c) Respiratory disease

         (d) Diseases of the skin

         (e) Diseases of the liver

2. Every individual will react differently when exposed to toxic substances.

   a. There is no "average" person.

   b. Some of the differences affecting one's susceptibility to a toxic substance are:

      (1) Gender

      (2) Age

      (3) Physical condition

      (4) Medical history

(5) Prior exposures to hazardous materials

E. Responder documentation and exposure records

1. First Responders need to be aware of the requirements for documenting personal exposures.

2. Every person who is exposed or may have been exposed at a hazardous materials incident should document their exposure. The documentation should include at a minimum:

   a. Exposed person's name

   b. Date, time and location of exposure

   c. Incident number

   d. Name of the hazardous material

   e. Type, concentration and duration of the exposure

   f. Decontamination method and medical treatment provided

   g. What specific task or activity was being performed

3. Federal and state regulations require that First Responders be medically evaluated when they:

   a. Are injured as a result of exposure

   b. Experience symptoms which may be related to exposure

4. Federal and state regulations also require that First Responders report exposures to their employer.

5. It is recommended that each First Responder maintain their personal exposure records.

V. SAFETY, ISOLATION AND NOTIFICATION

A. Introduction

1. There are two basic ways that First Responders can encounter hazardous material events.

   a. Dispatch to a known or suspected hazardous materials incident

   b. Officer observation - Often the officer may respond to one type of incident which may also involve a hazardous materials incident.

2. The efficiency and effectiveness of any hazardous material response hinges upon the First Responder's ability to recognize and adhere to established response priorities and protocols.

3. Failure of First Responders to follow accepted standards and practices can and does lead to an ineffective response and increased liability for the jurisdiction.

4. It is essential that First Responders clearly understand that their primary mission is to respond to hazardous materials incidents in a safe and competent manner, within their existing training, capabilities, resources and limitations.

5. As a First Responder, the officer must be able to do the job correctly and safely, and must know the basic concepts of safety, isolation and notification at a hazardous materials incident.

B. The primary consideration at a hazardous material incident is <u>always</u> SAFETY.

1. First responders should approach

   a. Up wind

   b. Up hill (upgrade)

   c. Up stream

   d. To a safe distance (use of binoculars may be beneficial)

2. Occasionally an ideal approach may not be possible due to existing wind direction or terrain. When such conditions exist, the First Responder must consider positioning themselves up wind versus up hill and select the safest approach.

3. When dispatched to a known or suspected hazardous materials incident the First Responder should consider requesting the following types of information from dispatch:

   a. The size and location of incident

   b. Occupancy type

c. Descriptions of vehicles involved

d. Weather conditions

e. Victims

f. Information or warning signs on containers (e.g. placards, labels, identification numbers, manufacturers and chemical names)

g. Where to meet the reporting party

4. At a hazardous material incident the First Responder should, in addition to the above, be aware of the following:

a. Presence of spilled material, smoke, fires, vapor clouds

b. People running from the incident or injured or unconscious

c. Obvious environmental damage (e.g. dead birds, animals, fish, vegetation, etc.)

d. Overturned vehicles, spills from containers

5. At the scene of a suspected hazardous materials incident, the First Responder should consider the following personal safety issues:

a. Be cautious, treat materials as hazardous until the materials are identified and verified as nonhazardous.

b. If possible, approach incidents from uphill, upwind and upstream.

c. Maintain a safe distance at all times.

d. Isolate the incident scene and deny entry to unauthorized persons.

e. Do not rush to assist. Under most circumstances First Responders at the awareness level are not adequately trained or equipped to conduct victim rescues.

f. Do not inhale, touch or ingest released materials. (Do not assume vapors to be harmless due to the lack of smell or taste.)

g. Do not eat, drink or smoke in the incident area.

h. Eliminate all ignition sources, including flares, near the incident scene area.

i. Establish and observe incident safety perimeters.

j. Continually reassess personal safety.

6. Before leaving a hazardous materials incident, the First Responder should consider the following personal safety issues:

   a. Check with the incident commander regarding the need for personal/equipment decontamination.

   b. Personal exposure report

   NOTE: State and federal regulations require reporting of personal exposures to hazardous materials. Individual agencies may also have policies that address specific reporting standards.

C. Incident isolation

1. There is a need to establish perimeters and zones at a hazardous materials incident to ensure the safety of all responders and the public and to localize the incident.

2. The first operational priority is to isolate the incident scene and deny entry by establishing a perimeter.

   a. A perimeter, with respect to a hazardous material incident, is an area which is secured far beyond the site of the incident and is an area where no one can pass without proper authority

   NOTE: The size of the perimeter is dependent upon several factors including local policy, incident specifics, etc.

   b. An outer perimeter should be established to isolate the incident and this perimeter should be large enough to prevent exposure to any responding personnel or the public.

   c. Various methods to establish perimeters include:

      (1) Barricades

      (2) Banner tape

      (3) Cones

      (4) Natural and artificial barriers (rivers, buildings, etc.)

      (5) Vehicles

      (6) The use of flares is generally not recommended and should be used only at the discretion of the incident commander.

3. Perimeters can and should be established by awareness and operational level first responders.

4. Incident Command System considerations

a. The Incident Command System will be invoked at most hazardous materials incidents.

b. An important obligation of the First Responder will be the communication of pertinent information about the hazardous materials incident to the incident commander or other designated persons.

c. The Incident Command System requires the designation of a safety officer when the ICS has been invoked at a hazardous material incident.

d. The responsibilities of the safety officer include identification and evaluation of hazards, direction with respect to safety of operations involved and modification of response activities in relation to any perceived hazard.

e. Individual First Responders will be required to follow the specific direction of the safety officer regarding appropriate safety procedures.

NOTE: Additional detail concerning the elements of the Incident Command System are included in Instructor Unit Guide #26 (Unusual Occurrences).

5. Control zones

a. "Control zone" is a term that relates specifically to an exclusionary perimeter.

b. Control zones are established at a hazardous materials incident based upon safety considerations and the degree of the hazard as determined by hazardous materials technicians or other appropriately qualified personnel.

6. There are three types of control zones.

a. The **Exclusion Zone** is the innermost interior zone which completely surrounds the hazardous materials incident and entry is restricted to trained personnel in protective clothing only.

b. The **Contamination Reduction Zone** is the area where personnel and equipment decontamination occurs and is between the exclusion and support zones.

c. The **Support Zone** is the area outside of the contamination reduction zone. Equipment and personnel are not expected to become contaminated in this area. This is the area where resources are assembled to support the hazardous materials incident operation. (e.g. staging areas, press, command post, etc.).

NOTE: Perimeters and control zones are not necessarily static and may need to be modified depending upon changing conditions at the scene of the incident.

7. Contaminated individuals and equipment

a. The First Responder should isolate contaminated persons and equipment within the established perimeter.

b. If possible, the contaminated person should be directed to a position/location away from the immediate threat and away from noncontaminated people.

c. The First Responder should advise responding personnel of the existence and location of the contaminated people and equipment.

D. Notifications

1. At the scene of a hazardous materials incident, the First Responder should communicate the following information to dispatch:

   a. Location of the incident

   b. Type of premises and/or vehicles involved

   c. Size and perimeter of the involved area

   d. Name of material involved if known

   e. Information such as placards, identification numbers, warning signs, etc.

   f. Weather conditions

   g. Ingress/egress routes to/from location

2. Request additional resources

   a. Command or supervisory personnel

   b. Fire service

   c. Emergency medical services, if needed

   d. Additional law enforcement personnel

3. Other resource agencies which may be requested by the incident commander include but is not limited to:

   a. Public works

   b. County agriculture (pesticide incidents)

   c. Utilities

   d. Health department

   e. Office of Emergency Services

f. California Highway Patrol

g. California Department of Transportation (state highways)

VI. RECOGNITION AND IDENTIFICATION OF HAZARDOUS MATERIALS

A. One of the major problems in a hazardous materials incident is that First Responders often do not know they are going to a hazardous materials incident until they arrive. The people reporting incidents may not know that they involve hazardous materials or they may not recognize it is important.

NOTE: Hazardous materials can be found anywhere and an effort should be made to discuss probable locations.

B. Types of incidents that may involve hazardous materials include, but are not limited to:

1. Traffic collisions
2. Medical aid calls
3. Fires
4. Building searches

C. Hazardous materials indicators

1. At some incidents there may be obvious indicators warning that hazardous materials are involved.
2. These indicators include, but are not limited to:
   a. A large number of victims with no apparent cause
   b. The presence of vapor clouds, strange-colored smoke
   c. Visible leaks, fires or damaged containers
   d. Relief valves operating
   e. Hissing, pinging or knocking sounds from closed containers

D. In order to protect themselves, First Responders should become familiar with other indicators of hazardous materials.

E. Ideally, the First Responder should begin to look for hazardous materials indicators as far from the scene as possible.

F. Although there may be numerous indicators that hazardous materials are present at an incident, this curricula focuses on the following:

1. Occupancy/location
2. Container shapes
3. Signs and signal words

4. United States Department of Transportation (DOT) communications standards

   a. Placards

   b. Labels

   c. Markings

   d. Shipping papers

   e. Identification numbers

   f. Emergency Response Guidebook (ERG)

5. Senses (sights, sounds, etc.)

NOTE: There are a variety of other sources of information such as Material Safety Data Sheets (MSDS) that can be used to help identify hazardous materials.

G. The First Responder should be aware of the common locations where hazardous materials are used, stored, manufactured and transported in their area. (e.g. homes, commercial buildings, etc.)

H. Container shapes can indicate hazardous materials. (e.g. rail cars, cargo tank, storage tanks, drums, etc.)

I. Signs and signal words

1. National Fire Protection Association standard signs for fixed facilities (NFPA 704 sign)

   a. Numerical degree of hazard rating (i.e. 0-4 with four being the most dangerous)

   b. Color quadrants (i.e. blue means health hazard, etc.)

   c. Additional information (e.g. OXY, radiological trefoil (propeller), etc.)

   d. Display considerations (e.g. size, location, etc.)

   e. Other considerations (e.g. location of materials, amount of materials, general rating, etc.)

2. Signal words

   a. "Danger" (most hazardous)

   b. "Warning"

   c. "Caution" (least hazardous)

NOTE: Signal words are most typically found on a variety of containers. (e.g. pesticides, solvents, household products and other materials)

3. Radiological signs

   a. Magenta and yellow

   b. Trefoil symbol (propeller) on radioactive warning signs

J. U. S. Department of Transportation (DOT) communication standards

1. The DOT requires the use of placards, labels, markings and shipping papers to indicate the hazards to emergency personnel.

2. The rules on the use and placement of the indicators vary with the type of hazardous materials shipped, the quantity, the mode of travel and the container type used.

3. Each indicator will guide the responder in identifying the hazard class of the material.

4. The nine United Nations hazard classifications are:

   a. Class 1: Explosives

   b. Class 2: Gases

   c. Class 3: Flammable liquid and combustible liquid

   d. Class 4: Flammable solid, spontaneously combustible material and dangerous- when-wet material

   e. Class 5: Oxidizers and organic peroxides

   f. Class 6: Poisonous material and infectious substance

   g. Class 7: Radioactive material

   h. Class 8: Corrosive material

   i. Class 9: Miscellaneous hazardous materials

NOTE: There are two additional domestic hazard classes in addition to the nine U.N. classes. These are ORM-D (Other Regulated Materials-Class D) and "Combustible Liquids." These additional classifications are included in the Department of Transportation Hazardous Materials Marking Labeling and Placarding Guide (DOT Chart 10).

5. Placards may display four items of information, each of which by itself, identifies the hazard class. These are:

   a. Placard color(s)

   b. Symbol or pictograph in the upper corner

c. Hazard class name, material name or identification number in the middle

d. Hazard class (or division) number in the bottom corner of the placard

6. Labels are used on packages of hazardous materials to indicate the hazard classification. A four-inch diamond is used to communicate the degree of hazard by use of:

   a. Label colors

   b. Symbol or pictograph in the upper corner of the label

   c. Hazard class name

   d. Hazard class (or division) number in the bottom corner of the label

7. Hazardous materials markings

   a. Markings are used in several locations including cargo tanks and packages of hazardous materials.

   b. Generally they consist of the proper shipping name and the identification number of the hazardous material and are usually in close proximity to the hazard label on a package.

8. Shipping papers

   a. Shipping papers give the proper shipping name (chemical or generic name), the hazard class (or division) number of the material and the assigned identification number.

   b. The paper will also give the emergency contact number which may be used for additional information on the materials shipped.

   c. The proper shipping name is found in the ERG blue-bordered pages and assist in identifying the hazardous material involved.

9. Identification number

   a. The identification number is a four-digit number assigned to a material or a group of materials with the same hazard characteristics.

   b. Identification numbers may be used on placards, vehicles, railcars, packages and shipping papers.

   c. These numbers are found in the ERG yellow-bordered pages and assist in identifying the hazardous material involved.

10. Department of Transportation Emergency Response Guidebook (ERG)

   a. The ERG was developed as a guide for initial actions to be taken by First Responders called to hazardous materials incidents.

b. The information given is intended for the initial phase of the incident only. Additional guidance from trained personnel will be needed as the incident progresses.

c. The guide is divided into five parts and is color coded for expedient usage.

(1) White pages provide information on the use of the guide.

(2) Yellow-bordered pages reference the four-digit identification number and refer the responder to the appropriate guide page.

(3) Blue-bordered pages reference the shipping name and refer the responder to the appropriate guide page.

(4) Orange-bordered pages (guide pages) provide information on potential hazards and appropriate emergency actions.

(5) The highlighted entries contained in both the yellow and blue-bordered pages refer the responder to the green- bordered pages.

(a) The green-bordered pages are the Table of Initial Isolation and Protective Action Distances.

(b) The entries in the green-bordered pages are listed by the four-digit identification number.

NOTE: Because of recent revisions to the ERG, The First Responder must first reference the appropriate guide page before referring to the green-bordered pages.

K. Senses (sight, sounds, etc)

1. Observing people running from buildings

2. Unconscious people or people showing signs of dizziness, nausea or breathing problems

3. Spills or leaks involving an unknown or dangerous substance

4. Fire, smoke, fumes or vapors

5. Hissing, pinging, or knocking sounds from closed containers

VII. PRELIMINARY INVESTIGATION OF HAZARDOUS MATERIALS INCIDENTS

A. As with any type of crime or incident, a peace officer is obligated to conduct an appropriate preliminary investigation of a hazardous materials incident.

B. The fundamental elements of a preliminary investigation should also be applied to cases involving hazardous materials or environmental crimes. These include:

1. Proceeding to the scene safely

2. Initiating an appropriate initial broadcast

3. Rendering assistance to the sick or injured

4. Determining whether or not a crime or other violations have occurred

5. Maintaining the security of the crime scene

6. Attempting to identify the person(s) responsible for causing the incident (e.g. attempting to locate the suspect(s) if the incident is criminal in nature)

7. Attempting to locate witnesses and develop other potential sources of information

8. Arranging for the collection, preservation and identification of any physical evidence

9. Accurately and completely documenting the event

C. Why is it important to investigate hazardous materials incidents and environmental crimes?

1. The number of hazardous materials incidents and the number of environmental crimes are increasing substantially.

2. Crimes involving hazardous materials compromise public safety.

3. These types of events generate a great deal of media attention and a subsequent public demand for action.

4. The expense of response, cleanup and disposal demands that measures be taken to recover costs expended by government agencies and other parties.

5. Failure to conduct an appropriate investigation or properly document an incident can unnecessarily expose an agency and individual peace officers to liability.

6. Law enforcement personnel are inherently better trained and better equipped to conduct a criminal investigation.

D. Defining environmental crimes

1. An environmental crime is a crime usually committed for a profit motive that

harms the health and safety of humans by exposing human populations to deleterious environmental effects or that degrade the natural environment.

NOTE: The expression "profit motive" implies that a suspect is attempting to avoid costs associated with lawful storage and disposal or to gain some type of financial advantage. (e.g. This may range from a homeowner inappropriately disposing a small quantity of a material to an industrial corporation unlawfully disposing of a large quantity of material.)

2. Environmental crimes often fall into one or more of the following areas:

   a. Unlawful transportation, disposal or storage of hazardous materials or hazardous wastes

   b. Crimes involving disposal of materials or substances injurious to fish and game

   c. Unlawful storage, disposal or treatment of medical waste (biohazards)

   d. Unlawful disposal, transportation, storage of radiological materials or substances

   e. Crimes involving materials or substances injurious to food and agriculture

E. Special considerations for the preliminary investigation of hazardous materials incidents and environmental crimes

1. Ensure that appropriate physical evidence is collected.

   a. Because the investigation may involve the collection of hazardous materials and substances, the services of specially trained and equipped personnel may be necessary.

   b. It may also be necessary to arrange for a specialized facility to securely store the evidence.

2. Documentation and reporting considerations

   a. Include opinions of specially trained personnel and other persons present at the scene who can provide information as to what the material is, what its harmful effects are, etc.

   b. Record all personnel involved in the incident as a means of:

      (1) Developing additional information after the incident

      (2) Documenting response costs needed for any subsequent cost recovery effort

   c. Document any adverse effects on the public and the environment (e.g. complaints of illness, disruption of traffic patterns, closures of businesses, etc.).

SUPPORTING MATERIAL

AND

REFERENCES

This section is set up as reference information for use by training institutions. These materials can be used for instruction, remediation, additional reading, viewing, or for planning local blocks of instruction. This list is not an endorsement of any author, publisher, producer, or presentation. Each training institution should establish its own list of reference materials.

TOPICAL LIST OF SUPPORTING MATERIALS AND REFERENCES INCLUDED IN THIS SECTION

Selected California Environmental Criminal Laws

Acronyms

SELECTED CALIFORNIA ENVIRONMENTAL CRIMINAL LAWS

This list is meant to be only a representative sample of California environmental criminal statutes. There are many more such crimes. The punishments listed are for first offenses. Many of these laws have much stiffer penalties for subsequent convictions.

Section	Crime	Type* & Fine	Prison
	Hazardous Waste Control Act		
25189.5(b) H&S	Illegal Disposal of Hazardous Waste at a Facility Which Has No Permit	**W** $5,000 - $100,000 **Mandatory**	16, 24 or 36 mos. or 1 yr jail
25189.5(c) H&S	Illegal Transportation of Hazardous Waste to a Facility Which Has No Permit	**W** $5,000 - $100,000 **Mandatory**	16, 24 or 36 mos. or 1 yr jail
25189.5(d) H&S	Illegal Treatment or Storage of Hazardous Waste	**W** $5,000 - $100,000 **Mandatory**	16, 24 or 36 mos. or 1 yr jail
25189.5(e) H&S	Any of the Acts in 25189.5 (b), (c) or (d) that Cause GBI or Substantial Probability of Death	**W** Up to $250,000 per day	Add 36 mos.
25189.6(a) H&S	Reckless Handling of Hazardous Wastes Which Causes Unreasonable Risk of Fire, Explosion, Serious Injury or Death	**W** $5,000 - $250,000 **Mandatory**	16, 24 or 36 mos. or 1 yr jail
25189.6(b) H&S	As in 25189.6(a) and Knowingly Places Another in Imminent Danger of Death or Serious Bodily Injury	**F** $5,000 - $250,000 **Mandatory**	3, 6 or 9 yrs.

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Section	Crime	Type* & Fine	Prison
	Chapter 6.95 H&S		
25507 H&S	Failure to Immediately Report Release or Threatened Release of a Hazardous Material	**M** Up to $25,000 per day	1 yr. jail
	Penal Code		
374.8(b) PC	Knowingly Causes Any Hazardous Substance to be Deposited Upon Any Road, Property of Another Without Permission, Etc.	**W** $50 - $10,000	16, 24 or 36 mos. or 1 yr jail
387 PC	Corporation, Manager, Supervisor, etc., Having Knowledge of Serious Concealed Danger, Fails to Notify Employee and CalOSHA in Writing	**W** Up to $25,000; corporation can be fined up to $1,000,000	16, 24 or 36 mos. or 1 yr jail
	Vehicle Code		
23112.5 VC	Failure to Notify CHP or Local Traffic Authority Regarding Release of HazMat on a Highway (almost any street)	**M** Not less than $2,000 **Mandatory**	6 mos.
27903 VC	Failure to Display Proper DOT Placards in Transportation	**I** As allowed by bail schedule	--
32103(a) - 32107 VC	Regulations Regarding Transportation of "Inhalation Hazard" Materials	**M** As allowed by bail schedule	6 mos.
34506 VC	Regulations Regarding Transportation of Hazardous Materials	**M** As allowed by bail schedule	6 mos.

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Section	Crime	Type* & Fine	Prison
	Fish & Game Code		
5650 FG	Deposit in, Permit to Pass Into, Etc. the Waters of the State Any of a List of Materials or "Any substance or material deleterious to fish, plant life, or bird life"	**M** $1,000 or $2,000 (but civilly can be much higher)	Up to 1 yr jail
	Medical Waste Management Act		
25097(d) H&S	Knowingly Stores, Treats, Disposes (or Causes Same) in Violation of Chapter (Medical Wastes)	**F** $5,000 - $25,000	Prison
	Radiation Control Laws		
25865(b)(1) H&S	Knowingly Disposes (or Causes) Any Radioactive Material Regulated by Chapter at Unlicensed Facility (if found to have caused substantial danger to public health or safety) ** If GBI or substantial probability of death	**W** Up to $100,000 per day ** Up to $250,000 per day	16, 24 or 36 mos. or 1 yr jail ** 3, 5 or 7 yrs
25865(c)(1) H&S	Knowingly Transports (or Causes) Any Radioactive Material Regulated by Chapter to an Unlicensed Facility (if found to have caused substantial danger to public health or safety) ** If GBI or substantial probability of death	**W** Up to $100,000 per day ** Up to $250,000 per day	16, 24 or 36 mos. or 1 yr jail ** 3, 5 or 7 yrs

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Section	Crime	Type* & Fine	Prison
	Food & Agriculture Code (Pesticides)		
12996(a) F&A	Violation of any provision of Division 7 of the Food & Agriculture Code regarding Agricultural Chemicals, Etc.	**M** $500 - $5,000	Up to 6 mos.; **Strict Liability**
12996(b)	Intentional violation of Subsection (a) "which created or reasonably could have created a hazard to human health or the environment"	**W** $5,000 - $50,000	Prison or jail

* **F** indicates Felony, **M** indicates misdemeanor, **W** indicates "Wobbler", and **I** indicates an infraction.

GBI indicates "Great Bodily Injury"

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ANNEX I -- ACRONYMS

AB	Assembly Bill
AFFF	Aqueous Film Forming Foam
BLEVE	Boiling Liquid Expanding Vapor Explosion
CAA	Clean Air Act (1980)
CAC	California Administrative Code
CAER	Community Awareness and Emergency Response Program
CAL-OSHA	California Occupational Safety and Health Administration
CDF	California Department of Forestry
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (1981)
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CHRIS/ HACS	Chemical Hazards Response Information System/ Hazard Assessment Computer System
CMA	Chemical Manufacturer's Association
CP	Command Post
CRWQCB	California Regional Water Quality Control Board
CWA	Clean Water Act (1972) = FWPCA
DFG	California Department of Fish and Game
DHS(DOHS)	Department of Health Services
DOT	Department of Transportation
DOT ERG	Department of Transportation Emergency Response Guidebook
EOC	Emergency Operations Center
EOD UNIT	Explosives Ordnance Disposal Unit
EPA	Environmental Protection Agency
ERD	Emergency Response Division (EPA)
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHSA	Federal Hazardous Substance Act (1960)
FRA	First Responder Awareness
FRO	First Responder Operational
FWPCA	Federal Water Pollution Control Act (1972) = CWA
HAZ MAT	Hazardous Material
HHS	U. S. Department of Health and Human Services
HWMB	Hazardous Waste Manifest Branch (of DHS)
ICS	Incident Command System
IC/SM	Incident Commander/Scene Manager
IDHA	Identification and Hazard Assessment
IDLH	Immediately Dangerous to Life or Health
IMO	International Maritime Organization
LC_{LO}	Lethal Concentration, low
LC_{50}	Lethal Concentration, 50%
LD_{50}	Lethal Dosage, 50%
NCRIC	National Chemical Response and Information Center (DMA)
NEPA	National Environmental Policy Act (1970)
NIIMS	National Interagency Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NOS	Not Otherwise Specified
NRC	National Response Center
OES	Office of Emergency Services (State or County)
ORM	Other Regulated Material
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Act (1970)
PIO	Public Information Officer
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act (1976)

RQ	Reportable Quantity
SAC	State Agency coordinator
SARA	Superfund Amendments and Reauthorization Act (1986)
SB	Senate Bill
SCBA	Self-Contained Breathing Apparatus
SDWA	Safe Drinking Water Act (1974)
SINCIAPCP-DDD	Safety, Isolation & Deny Entry, Notifications, Command/Management, Identification & Assessment, Action Planning, Protective Equipment, containment & Control, Protective Actions, Decontamination & Cleanup, Disposal, and Documentation
SLC	State Lands Commission
SWRCB	State Water Resources Control Board
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act (1976)
TSCD	Toxic Substances Control Division
TSDF	Treatment, Storage and Disposal Facility
USCG	U. S. Coast Guard
USEPA	U. S. Environmental Protection Agency (EPA)
USGS	U. S. Geological Survey
USFWS	U. S. Fish and Wildlife Service
USNRC	U. S. Nuclear Regulatory Commission

ADDITIONAL REFERENCES

Dot Chart 9 (hazardous Materials Marking, Labeling and Placarding Guide, U. S. Department of Transportation, Research and Special Programs Administration.

Emergency Response Guidebook, U. S. Department of Transportation.

Hazardous Materials Training, Module I and II, California Highway Patrol.

POST Video Catalog, 1993, 1601 Alhambra Blvd., Sacramento, CA, 95816, (916) 227-4856,

Transportation of Hazardous Materials in California by Highway and Rail, Report to the Legislature, California Department of Transportation.