ATTACHMENT 6A

Hazardous Materials Responder

Levels of Training

Introduction

According to federal (29 CFR 1910.120) and state (8 CCR 5192) regulations, there are five levels of "employees who participate, or are expected to participate, in emergency response....". These are minimum levels of training and should be considered the basis for all responders. Training should be based on the hazards that are expected to be encountered, and higher degrees of initial and continuing training are recommended.

FIRST RESPONDER (AWARENESS LEVEL)

First responders at the awareness level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the authorities of the release. First responders at the awareness level shall have sufficient training or shall have had sufficient experience to objectively demonstrate competency in the following areas:

- An understanding of what hazardous materials are and the risks associated with them in an incident;
- An understanding of the potential outcomes associated with an emergency created when hazardous materials are present;
- The ability to recognize the presence of hazardous materials in an emergency;
- The ability to identify the hazardous materials, if possible;
- An understanding of the role of the first responder awareness level individual in the employer's emergency response plan, including site security and control, and the U.S. Department of Transportation's Emergency Response Guidebook; and
- The ability to realize the need for additional resources, and to make appropriate notifications to the communication center.

FIRST RESPONDER (OPERATIONS LEVEL)

First responders at the operations level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. First responders at

the operational level shall have received at least eight hours of training or have had sufficient experience to objectively demonstrate competency in the following areas, in addition to those listed for the awareness level, and the employer shall so certify:

- A knowledge of the basic hazard and risk assessment techniques;
- A knowledge of how to select and use proper personal protective equipment provided to the first responder operational level;
- An understanding of basic hazardous materials terms;
- A knowledge of how to perform basic control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available within their unit;
- A knowledge of how to implement basic decontamination procedures; and
- An understanding of the relevant standard operating procedures and termination procedures.

HAZARDOUS MATERIALS TECHNICIAN

Hazardous materials technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release to plug, patch, or otherwise stop the release of a hazardous substance. Hazardous materials technicians shall have received at least 24 hours of training equal to the first responder operations level and, in addition, have competency in the following areas, and the employer shall so certify:

- A knowledge of how to implement the employer's emergency response plan;
- A knowledge of the classification, identification, and verification of known and unknown materials by using field survey instruments and equipment;
- An ability to function within an assigned role in ICS;
- A knowledge of how to select and use proper specialized chemical personal protective equipment provided to the hazardous materials technician;
- An understanding of hazard and risk assessment techniques;
- An ability to perform advance control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available with the unit;
- An understanding and the ability to implement decontamination procedures;
- An understanding of termination procedures; and
- An understanding of basic chemical and toxicological terminology and behavior.

HAZARDOUS MATERIALS SPECIALIST

Hazardous materials specialists are individuals who respond with, and provide support to, hazardous materials technicians. Their duties parallel those of the hazardous materials technician. However, their duties require a more directed or specific knowledge of the various substances they may be called upon to contain. The hazardous materials specialist would also act as the site liaison with federal, state, local, and other government authorities in regard to site activities. Hazardous materials specialists shall have received at least 24 hours of training equal to the technician level and, in addition, have competency in the following areas, and the employer shall so certify:

- A knowledge of how to implement the local emergency response plan;

- An understanding of the classification, identification, and verification of known and unknown materials by using advanced survey instruments and equipment;
- A knowledge of the State Emergency Plan;
- An ability to select and use proper specialized chemical personal protective equipment provided to the hazardous materials specialist;
- An understanding of in-depth hazard and risk techniques;
- An ability to perform specialized control, containment, and/or confinement operations within the capabilities of the resources and personal protective equipment available;
- An ability to determine and implement decontamination procedures;
- An ability to develop a site safety and control plan; and
- An understanding of chemical, radiological, and toxicological terminology and behavior.

ON-SCENE INCIDENT COMMANDER

Incident Commanders who will assume control of the incident scene beyond the first responder awareness level will receive at least 24 hours of training equal to the Level 2: first responder (operations level) and, in addition, have competency in the following areas (and the employer will so certify):

- Know and be able to implement the employer's ICS;
- Know how to implement the employer's emergency response plan;
- Knowledge of the state emergency response plan and of the Federal Regional Response Team;
- Know how to implement the local emergency response plan;
- Know and understand the hazards and risks associated with employees working in chemical protective clothing; and
- Know and understand the importance of decontamination procedures.

All of the above must have annual refresher training. Upon completion of the above levels of training, each participant receives a written certificate. Hazardous materials responders must have one or more of the above levels of training, depending on their responsibilities at an emergency response. In some instances, proof of training is required before entering a response or cleanup site; therefore, be prepared to have a copy of the certificate(s) or a card showing proof of the requisite training. Public agency employees that have the potential of being involved in a hazardous materials response or cleanup site should have, at the minimum, Level 1: first responder (awareness level) training.

** *Do not make assumptions on the level of training that the responders might have* **

Personal Protective Equipment

Introduction

Personal Protective Equipment (PPE) is required to protect a person from chemical, biological, radiological, and physical hazards that may be encountered at a hazardous materials incident. Adequate personal protective equipment should protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing. Personal protective equipment includes both personal protective clothing and respiratory protection. PPE is divided into **four** categories based on the degree of protection needed. The following descriptions are not definitive. Refer to appropriate documents for a complete description (e.g.; Federal OSHA regulations 29 CFR 1910.120, NIOSH, ACGIH, and NFPA standards address PPE selection in greater detail for response to different types of hazardous materials).

An unidentified product with unknown properties should be approached only in Level A or B protection. Never use personal protection equipment unless you are properly trained and feel comfortable with its use. PPE does not protect against fire or explosion unless additional types of protection are used.

Selection of the appropriate PPE is a complex process which must take into consideration a variety of factors, including, but not limited to:

- Identification of the hazards, or suspected hazards
- Routes of exposure (inhalation, skin absorption, ingestion, skin or eye contact)
- Performance of the PPE materials in providing a barrier to the hazards
- Break-through time of the PPE
- Responder's tasks and duration
- Temperature

Level A is to be selected when the greatest level of skin, respiratory, and eye protection is required. Level A protection should be used when:

- The hazardous substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on either the measured (or potential for) high concentration of atmospheric vapors, gases, or particulates; or the site operations and work functions involve a high potential for splash, immersions, or exposure to unexpected vapors, gases, or particulates that are harmful to the skin or are capable of being absorbed through the skin;
- Substances with a high degree of hazard to the skin are known or suspected to be present and skin contact is possible; and
- Operations are being conducted in confined, poorly ventilated areas, and the absence of conditions requiring Level A protection have not yet been determined.

Primary required equipment are:

- Positive pressure, full face-piece, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA; and
- Totally encapsulating chemical-protective suit.

Other required equipment are:

- Inner and outer chemical resistant gloves, and chemical resistant boots with steel toe and shank.

Optional equipment are:

- Long underwear, hardhat, disposable suit, gloves, boots, and coveralls.

Level B is to be selected when the highest level of respiratory protection is necessary, but a lesser level of skin protection is needed. Level B should be used when:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection;
- The atmosphere contains less that 19.5 percent oxygen; or
- The presence of incompletely identified vapors or gasses is indicated by a direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to the skin or capable of being absorbed through the skin. Note: This involves atmospheres with immediately dangerous to life and health (IDLH) concentrations of specific substances that present severe inhalation hazards and that do not represent severe skin hazards; or that do not meet the criteria for use of air-purifying respirators.

Primary required equipment are:

- Positive pressure, full face-piece, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA;
- Hooded chemical-resistant clothing (overalls and long-sleeved jacket, coveralls, one or two piece chemical-splash suit, and disposable chemical-resistant overalls).

Other required equipment are:

- Inner and outer chemical resistant gloves, and chemical resistant boots with steel toe and shank.

Optional equipment are:

- Coveralls, hardhat, boot covers, and face shield.

Level C is to be selected when respiratory protection can be provided with respirators and skin contact with the material will not cause an adverse affect or be absorbed through any exposed skin. Level C protection should be used when:

- The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin;
- The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove the contaminants; and
- All criteria for the use of air-purifying respirators are met.

Primary required equipment are:

- Full-face or half-mask, air purifying respirators; and

- Hooded chemical-resistant clothing (overalls and long sleeved jacket,

coveralls, one or two piece chemical-splash suit, and disposal chemical-resistant overalls).

Other required equipment are:

- Inner and outer chemical resistant gloves.

Optional equipment are:

- Coveralls, chemical resistant boots with steel toe and shank, boot covers, hardhat, escape mask, and face shield.

Level D is a work uniform affording minimal protection, used for nuisance contamination only. Level D protection should be used when:

- The atmosphere contains no known hazard; and
- Work conditions preclude splashes, immersion, or the potential for unexpected inhalation of, or contact with, hazardous levels of any chemicals.

Primary required equipment are:

- Coveralls, chemical resistant boots/shoes with steel toe and shank.

Optional equipment are:

- Gloves, outer boots, safety glasses or chemical resistant goggles, hardhat, escape mask, and face shield.

An unidentified product with unknown properties should be approached only in Level A (vapor protective suit) or B (liquid splash protective suit) positive pressure protection with self-contained breathing apparatus (SCBA). Never use personal protection equipment unless you are properly trained and feel comfortable with its use. Hazardous materials PPE does not protect against fire or explosion unless additional types of protection are used.

NOTE: Combinations of personal protective equipment, other than those described for Levels A, B, C, and D protection, may be more appropriate and may be used to provide the proper level of protection.

Specialized Equipment

Hazardous material incidents often require specialized equipment to accomplish the task of abatement of the release or threatened release. Some of the resources needed are readily available to emergency responders such as sand, water and foam from a fire engine, or the DOT Emergency Response Guidebook. Other forms of equipment are highly specialized and not widely distributed. Examples include sophisticated monitoring and sampling devices and totally encapsulating suits.

The space constraints of this Plan do not permit a thorough discussion of Specific equipment used in hazardous material incidents. Equipment use and familiarity should be addressed during responder training. All agencies are encouraged to ascertain what equipment is available for hazardous material response, both within their organization or otherwise acquirable.

Levels of Response

Incident Classifications

Levels of response may vary due to differing perceptions of the incident by response personnel, based on their experience, training, capability, and the local response policy. In addition, the characteristics of the material, the nature of its release, and the vulnerability of the receptors (i.e., populations, ecosystems) may also influence the level of response. As an example:

- Response to an uncontained release of a smaller amount of an extremely hazardous substance may require a higher level of response than a response to a contained release of a greater amount of a hazardous material that is less hazardous.

- A spill in an area that is more sensitive (environmentally, culturally, or economically) may have an increased level of response than an area that is less sensitive, as determined by the Incident Commander or the Unified Command.

The **Incident Classifications** in the following descriptions and table – consistent with *NFPA 471: Recommended Practice for Responding to Hazardous Materials Incidents (1997 Edition)* - can be used as a general guideline in determining the appropriate levels for response and training:

Level One Incident (Minor):
An incident that can be easily handled using resources immediately available to first responders having jurisdiction. Significant human health and safety and/or environmental issues do not arise.

Level Two Incident (Moderate):
An incident that is beyond the capabilities of a local jurisdiction that may require the use of mutual aid, either for operational assistance or logistical support. A declaration of a local emergency may be issued, a Governor's Proclamation may be issued and the local Emergency Operations Center (EOC) may be partially or fully activated. Human health and safety and/or the environment are affected.

Level Three Incident (Major – Catastrophic):
An incident that significantly exceeds local capabilities. Considerable environmental and/or public health impacts have occurred or are expected. A local emergency is usually declared; a Governor's Proclamation may be issued, along with a request for a Presidential Declaration; and the local EOC and the State Operations Center (SOC) are fully activated.

Incident Level:	Level One	Level Two	Level Three
Mutual Aid	None: In-house or local resources are adequate & available	Beyond local capabilities: will require mutual aid, or outside responders.	Significantly exceeds local capabilities: will require extensive state and/or federal resources
Incident conditions/ Product identification	• Placard not required • NFPA 0 or 1 in any category • Class 9: Miscellaneous hazardous materials • ORM-D • Oil spills: < 1,000 gals	• DOT placard required • NFPA 2 in any category • PCBs without fire • EPA- or Cal/EPA-regulated waste • Oil spills: 1,000 gals - 10,000 gals	• Class 1: explosives • Class 2: gases • Class 3: flammable liquids • Class 4: flammable solids, spontaneously combustible materials, & materials dangerous when wet • Class 5: organic peroxides and oxidizers • Class 6: poisonous and etiologic/infectious materials • Class 7: radioactive materials • Class 8: corrosives • Also: chlorine, fluorine, anhydrous ammonia • PCBs with fire, • NFPA 3 & 4 in any category, including special hazards • DOT inhalation hazard • EPA extremely hazardous or Cal/EPA-acutely hazardous substances • Cryogenics • Oil spills: >10,000 gals
Container size	Small (e.g., pails, drums, bags, packages, cylinders - *except one-ton*)	Medium (e.g., one-ton cylinders, portable containers, nurse tanks, multiple small packages)	Large (e.g., tank cars, tank trucks, stationary tanks, hopper cars/trucks, multiple medium containers)
Container integrity	Not damaged	Damaged but able to contain the contents to allow product handling or transfer	Damaged to such an extent that catastrophic rupture is possible

Incident Level: (cont'd)	**Level One**	**Level Two**	**Level Three**
Leak severity	No release or small release contained or confined with readily available resources	Release may not be controllable without special resources	Release may not be controllable, even with special resources.
Fire/explosion (Potential & Actual)	None - Low	Medium	High
Life safety	No life-threatening situation from materials involved.	Localized area, limited evacuation area	Large area, mass evacuation area
Environmental impact (Potential & Actual)	None - Minimal	Moderate	Severe