

4.13 HAZARDOUS MATERIALS

Scope- This plan provides a basic philosophy and strategic guidelines for hazardous materials situations. All Town of Greenville Fire Department Standard Operating Guidelines, unless superseded by a specific part of this plan, remain in effect for hazardous materials incidents.

Hazardous Materials incidents encompass a wide variety of potential situations including fires, spills, transportation accidents, chemical reactions, flammability, radiological hazards, corrosives, explosives, health hazards, chemical reactions and combination of factors. This plan provides a general framework for handling a hazardous materials incident, but does not address the specific tactics or control measures for particular incidents.

Every field incident presents the potential for exposures to hazardous materials and the products of combustion of an ordinary fire may present severe hazards to personnel safety.

This procedure is specifically applicable to known hazardous materials incidents, but it does not reduce the need for appropriate safety precautions at every incident. The use of proper turnouts and SCBA whenever appropriate and the utilization of all Standard Operating Guidelines on a continual basis is the starting point for this plan.

The main objective for Town of Greenville Fire Department personnel is to avoid involvement in which you are not trained or adequately equipped.

As soon as possible, a safe size up must be conducted to evaluate the need for the Appleton Hazardous Materials Team. Appleton and Oshkosh are Level "A" qualified. Appleton serves as the Official County Hazardous Materials Response Team.

The EPA has different levels of protection for protective clothing requirements:

Level "A" - Normally requires a totally encapsulating, reusable suit with a SC8A inside.

Level "B" - Normally requires a totally encapsulating, disposable suit with SC8A inside.

Level "C" - Liquid splash protection is normally required with SC8A and full protective clothing.

The Town Greenville Fire Department is not currently equipped or trained to utilize Level "A" or "B" protective clothing, but are trained to assist as needed. The Greenville Fire Department shall train as many members as possible to the level of First Responder Operations.

Communication Center (E911)- The Communication Center must attempt to obtain any and all information from the person reporting a hazardous materials incident. The information should, if possible, include material name and/or type, amount and size of container(s), problem (leak, spill, fire, etc.) and dangerous properties of the materials. The incident taker should stay on the telephone with the caller to gain additional information after dispatching the fire department.

Any additional information should be relayed to responding units after dispatching.

If the call comes from a person with particular knowledge of the hazardous situation, have that person meet and direct the arriving units.

The Communication Center will immediately begin to research the situation using resources at his/her disposal (responsible party, reference books, telephone contacts, etc.) The Communication Center will obtain the prevailing wind speed and direction from the Outagamie Airport Control Tower (739-8517) and announce them to the responding units. If they do not report it, the first responding unit shall request wind speed and direction.

The Communication Center should attempt to anticipate the needs of any particular situation and be prepared for them.

First Arriving Unit- The first arriving officer will establish command and begin a size up. The first unit must consciously avoid committing itself to a dangerous situation. When approaching, slow down or stop to assess any visible activity taking place. Evaluate effects of wind, topography and location of the situation.

Command will advise ALL OTHER UNITS to stage until instructed to take specific action. Units must stage in a safe location, taking into account wind, spill flow, explosion potential and similar factors in any situation.

Size-Up- Command must make a careful size-up before deciding on a commitment. It may be necessary to take immediate action to make a rescue or evacuate an area, but this should be done with an awareness of the risk to Fire Department personnel, and taking advantage of available protective equipment.

The objective of the size-up is to identify the nature and severity of the immediate problem and gather sufficient information to formulate a valid action plan.

A hazardous materials incident requires a more cautious and deliberate size-up than most fire situations.

Avoid premature commitment of companies and personnel to potentially hazardous locations. Proceed with caution in evaluating risks before formulating a plan and keep uncommitted companies at a safe distance.

Identify a hazardous area based on potential danger, taking into account materials involved, time of day, wind and weather conditions, location of the incident and degree of risk to unprotected personnel. Take immediate action to evacuate and/or rescue persons in critical danger if possible, providing for safety of rescuers.

The major problem in most cases is to identify the type of materials involved in a situation, and the hazards presented, before formulating a plan of action. Look for labels, markers, and shipping papers, refer to pre-fire plans, and ask personnel at the scene (plant management, responsible party, truck drivers, Communication Center). Utilize reference materials carried on apparatus and have the Communication Center contact other sources for assistance in sizing up the problem (Chemtrec, other agencies, manufacturers of materials, etc.).

Action Plan- Based on the initial size-up and any information available, Command will have to formulate an action plan to deal with the situation.

Most hazardous materials are intended to be maintained in a safe condition for handling and use through confinement in a container or protective system. The emergency is usually related to the material escaping from the protective container or system and creating a hazard on the exterior.

The strategic plan must include a method to get the hazardous material back into a safe container, dispose of it, or allow it to dissipate safely.

The specific action plan must identify the method of hazard control and identify the resources available and/or required to accomplish this goal. It may be necessary to select one method over another due to the unavailability of a particular resource or to adopt a "holding action" to wait for needed equipment or supplies.

Hazardous material incidents have no specific plans for mitigation because the action

plan is solely dependent on the material(s) involved. Research concerning the identity of the material must be made to determine the action plan.

Normally on all hazardous material responses, where a substance has been released, the Appleton Hazardous Material Response Team shall be notified to aid in the development of the action plan, decontamination and cleanup plan of the material released. Cleanup will normally be done by private vendors trained and certified in dealing with the material that was released.

The Action Plan Must Provide For:

1. Safety of fire fighters
2. Safety of citizens
3. Evacuation of endangered area, if necessary
4. Control of situation
5. Stabilization of hazardous material
6. Disposal or removal of hazardous material

Avoid committing personnel and equipment prematurely or "experimenting" with techniques and tactics. Many times it is necessary to evacuate and wait for special equipment or expert help.

Control of Hazardous Area- A hazardous material incident has three zones associated with the scene, similar to a fire. They are the hot zone, warm zone, and the cold zone.

"HOT" Hazard Zone- The "HOT" (Hazard) Zone is the area in which personnel are potentially in immediate danger from the hazardous condition. This is established by Command and controlled by the Fire Department. Access to this area will be rigidly controlled and only personnel with proper protective equipment and an assigned activity will enter. All companies will remain in tact in designated staging areas until assigned. Personnel will be assigned to monitor entry and exit of all personnel from the Hot (Hazard) Zone. The Hot (Hazard) Zone should be geographically described to all responding units, if possible. A Safety Officer shall be established to control access to the Hot (Hazard) Zone and maintain an awareness of which personnel are working in the area.

Responsibility for control of personnel in this zone includes not only Fire Department personnel, but any others who may wish to enter the Hot (Hazard) Zone. (Police, press, employees, tow truck drivers, ambulance personnel, etc.) Access shall be denied to any unauthorized personnel.

Warm Zone- The Warm Zone is the larger area surrounding the Hot (Hazard) Zone in which a lesser degree of risk to personnel exists. All civilians would be removed from this area. The limits of this zone will be enforced by the Fire Department based on distances and directions established in consultation with Command. The area to be evacuated depends on the nature and amount of the material and type of risk it presents to unprotected personnel (toxic, explosive, etc).

In some cases, it is necessary to completely evacuate a radius around a site for a certain distances (i.e. potential explosion).

In other cases, it may be advisable to evacuate a path downwind where toxic or flammable vapors may be carried (and control) ignition sources in case of flammable vapors).

NOTE: When toxic or irritant vapors are being carried downwind, it may be most effective to keep everyone indoors with windows and doors closed to prevent contact with the

material instead of evacuating the sheltering area in place. In these cases, companies would be assigned to patrol the area assisting citizens in shutting down ventilation systems and evacuating persons with susceptibility to respiratory problems.

In all cases, the responsibility for safety of all potentially endangered citizens rests with Command.

When evacuation is required, Command shall define and control the evacuation process in conjunction with other agencies such as police. When the evacuation entails persons and properties in adjacent communities, the community in which the incident has occurred shall be in command of the evacuation process. This Department shall assist and cooperate under the direction of the agency requesting evacuation in the community where the release has occurred.

Cold Zone- The Cold Zone is the outside area surrounding the Warm Zone where no specialized protective equipment is necessary. The Command Post shall be located in the Cold Zone.

Use of Non-Fire Department Personnel- In some cases, it may be advantageous to use non-Fire Department personnel to evaluate hazards and perform certain functions for which they would have particular experience or ability. This practice should only be conducted with the supervision of a qualified hazardous materials team.

General Factors To Consider- Due to the wide variety of situations Fire Department personnel may encounter in dealing with hazardous materials, these considerations will not attempt to provide specific guidelines on anyone individual chemical or situation and are not listed in any priority.

It is imperative that the first arriving Fire Department unit determine what hazardous material(s) is involved, and how much, prior to taking action to stabilize the incident.

Entering the scene to make positive identification may be a considerable risk. The danger of explosions, leaking gas and poisoning may be great.

Action taken prior to determining the product involved may be totally wrong and may severely compound the problem.

Transportation emergencies are often more difficult than those at fixed locations. The materials involved may be unknown, warning signs may not be visible, or obscured by smoke and debris, the driver may be killed or missing. D.O.T. hazardous materials marking systems are inadequate because some hazardous materials in quantities up to 1,000 pounds, do not require a placard, and there may be combinations of products involved with only a "dangerous" placard showing. Sometimes only the most evident hazard is identified, while additional hazards are not labeled.

The following items may be significant to consider at any Hazardous Materials incident (Not all will be significant at any particular incident):

1. Cooling Containers
 - a. Use adequate water supply
 - b. Apply heavy streams to vapor space
 - c. Use unmanned streams
 - d. Use natural barriers to protect personnel
2. Remove Uninvolved Materials

- a. Move individual containers
 - b. Move tank cars away from flame
 - c. Cool containers before moving
3. Stop the Leak
- a. Close valves
 - b. Place plug in openings
 - c. Place container in upright position
 - d. Use water spray to approach leak
4. Apply Diluting Spray or Neutralizing Agent
- a. Dilute water soluble liquids
 - b. Flush corrosives to reduce danger
 - c. Use spray streams to absorb vapor
 - d. Use water with caution on some materials
5. Construct Dams, Dikes or Channels
- a. Direct running liquid away from exposures
 - b. Control run off from corrosive materials
 - c. Use sand or dirt
6. Remove Ignition Sources
- a. Start down wind
 - b. Eliminate all sources of heat, spark, friction
7. Call for Additional Resources when their need is only anticipated. The actions taken by Command in the first few minutes of an incident affects the outcome more than any other single factor.

Outagamie County Emergency Management has a reference list of personnel and organizations which may be helpful during a Hazardous Materials Emergency. These include:

1. Authorities in charge of landfills and dumps where hazardous materials may be disposed.
2. Commercial chemical experts with experience in handling and disposing of most common chemicals.
3. Pesticide consultants and disposal teams with equipment to clean up agricultural chemical spills.
4. Personnel from State and Federal Regulatory Agencies. These personnel should be contacted for incidents involving transportation of hazardous materials.
5. Railroad information numbers
6. Tank truck companies with de-fueling capability (in case carrier involved in incident has none).
7. Radioactivity and military weapons emergency contacts.

Decontamination- The purpose of the decontamination is to assure that any potentially harmful or dangerous residues, on persons or equipment, are confined within the Hot Hazard Zone. Decontamination is intended to prevent the spread of contaminants beyond the defined area -particularly to avoid carrying contaminants back to the fire station or to other environments.

The specific measures required to decontaminate personnel or equipment will vary with

the contaminant, the circumstances and the level of contamination. These factors must be considered on a case-by-case basis, within the guidelines as recommended by a qualified Hazardous Materials Team.

Command is responsible for assigning a decontamination officer at incidents which involve a potential decontamination problem. This function should, preferably, be assigned to personnel from the Hazardous Materials Response Team. It must be integrated into the management of the Hot Hazard Zone.

The decontamination officer is responsible for determining the most appropriate decontamination procedures and managing the decontamination process.

The initial assessment of decontamination requirements must be based upon the specific needs of the situation. This must take into account the specific materials involved, the degree and type of exposure and the most appropriate methods. The assessment will require research and may involve consultation with toxicology resources.

When the need for a Decontamination Area is indicated, this function will be established as a sector.

Decontamination Officer- The Decontamination Officer must assume that all personnel and equipment leaving the Hot Hazard Zone are contaminated. Three courses of action are available:

1. Confirm NOT CONTAMINATED -using instruments or due to the nature of the situation
2. DECONTAMINATE (as appropriate to the situation) and release
3. RETAIN and package for removal from the site for disposal or decontamination at a different location.

In all cases, the primary objective must be to avoid contaminating anyone or anything beyond the Hot Hazard Zone.

Decontamination Area- The DECONTAMINATION AREA should be established within the Warm Zone perimeter adjacent to the ENTRANCE/EXIT. Personnel and/or equipment shall not be permitted to leave the Warm Zone without approval from the Decontamination officer.

The Decontamination Area should provide a corridor leading away from the source of contamination toward the Exit, with stations along the way for the deposit of tools, equipment, protective clothing and other items. Monitoring personnel and equipment should be appropriately placed along the path. A person traveling along the path should experience a decreasing level of contamination along the way. When showers or spray nozzles are used, adequate space must be provided to avoid contamination of other areas or persons.

All contaminated items must remain within the perimeter of the Warm Zone until decontaminated or safely packaged for removal. Personnel should be assigned to inspect persons and/or equipment before they can be released from the Decontamination Area. This inspection may be visual or may involve the use of monitoring instruments, when available. It must be assumed that items or persons are contaminated, unless their non- contamination can be confirmed.

Decontamination Area Precautions- During the decontamination process, all personnel working in the Decontamination Area must be adequately protected from containments. The Decontamination Officer will identify and require the appropriate protective equipment. These

individuals and their equipment may also require decontamination after use.

Any runoff or residue from decontamination procedures must be contained within the Warm Zone and retained for proper disposal. Contaminated runoff must not be allowed to spread or escape. Diking may be necessary.

Contaminated Patients- Patients in need of medical treatment should be removed from the source of contamination as quickly as possible, but remain within the Warm Zone perimeter. These patients must not be allowed to contaminate further areas or persons. It may be necessary to bring treatment personnel (with adequate protective clothing) into the Warm Zone to deal with these patients, unless they can be rapidly and effectively decontaminated. Once decontaminated, the patients and treatment personnel may leave the Hazard Zone.

Transportation- If it is necessary to transport contaminated patients to medical facilities, the receiving hospital must be notified in advance of the nature of the contamination, in order to make necessary preparation. The ambulance used will be considered contaminated and will have to be decontaminated before being used to transport any non-contaminated persons. The ambulance should be brought to the Warm Zone perimeter for loading. When feasible, the ambulance should be prepared by draping exposed surfaces with sheets or polyethylene covers.

Decontaminated Persons- When persons are decontaminated at a Decontamination Area, they may be released to leave the Warm Zone. This includes Fire Department personnel, other emergency personnel, civilians, and patients. The Decontamination Officer will determine when it is appropriate to release custody of protective clothing, personal effects, and equipment. The Decontamination Officer may release individuals who are substantially decontaminated and direct them to medical facilities for further evaluation or decontamination. Individuals may also be directed to shower, change clothes, or take other secondary decontamination measures.

Protective Equipment Personal Effects- When feasible, protective clothing and personal effects should be decontaminated and released from the Warm Zone with the individual. If the Decontamination Officer determines this is not feasible, these items will be carefully guarded by Decontamination Sector personnel until a determination can be made regarding their final inspection.

Tools and Equipment- The Decontamination Officer will determine when tools and equipment may be released from the Warm Zone. No item shall be removed without approval. The Decontamination Officer may impound equipment for later evaluation and have it packaged for storage or transportation.

Command Responsibility- In summary of this policy, command must accomplish the following objectives to mitigate the hazardous material incident:

- A. Establish command and stage all other responding companies at a safe location from the incident
- B. Identify any and all materials involved and determine the exact cause for the release.
- C. Isolate area involved and identify potential areas of involvement
- D. Develop an action plan based on the known product(s) involved with the

assistance of outside or specialized teams if required. Action plan must provide for:

1. Safety of fire fighters
2. Safety of citizens
3. Evacuation of endangered area, if necessary
4. Control of situation
5. Stabilization of hazardous material and/or
6. Disposal or removal of hazardous material

A qualified Hazardous Materials Response Team must be requested as soon as possible. A Hazardous Materials Team Commander shall work alongside the Incident Commander.