



Northeast Fire Department Association

Operations

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NEFDA Hazardous Materials Response Team

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NEFDA President

I PURPOSE

The purpose of the NEFDA Hazardous Response Team (NEFDAHMRT) is to protect human health, environment, and property through team work and holistic solutions. Hazardous material incidents may occur due to man-made or natural causes. The intent of this standard operating procedure (SOG) is to provide information and guidance in the management of hazardous material incidents including chemical, biological, explosive, radioactive, and nuclear (CBRNE) events as well as toxic industrial chemical (TIC) releases. Additionally, the NEFDAHMRT will support technical rescue and explosive ordinance operations when required. Lastly, NEFDAHMRT will support regional events when requested by the North Central Texas Council of Government

II DEFINITIONS

- A. Chemical, Biological, Explosive, Radioactive, and Nuclear (CBRNE) - acronym for Chemical, Biological, Radiological, Nuclear, and high yield Explosives. These types of weapons are used to cause mass disruption and possibly mass casualties. They may also be known as Weapons of Mass Destruction (WMD).
- B. Decontamination - the process of cleansing an object or substance to remove contaminants such as micro-organisms or hazardous materials, including chemicals, radioactive substances, and infectious diseases.
 - 1. Gross - the physical process of immediately reducing contamination on patients in potentially life-threatening situations with or without formally establishing a decontamination corridor.
 - 2. Mass - the decontamination of large numbers of people, in the event of industrial, accidental, or intentional contamination by toxic, infective, caustic, polluted, or otherwise unhealthful or damaging substances.
 - 3. Technical – the methodical and systematic process of removing potential contamination with established corridors for ambulatory and non-ambulatory personnel to operate in chemical protective clothing. There's also an area for tools and meters to be "dropped" from decontamination.

- C. Hazmat Levels of Training – hazmat training shall be complete in accordance with OSHA 29 CFR 1910.102 and NFPA 472. Annually, a minimum of 8 hours of continuing education must be maintained.
1. Hazmat Awareness – 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 proper authorities of the release. They could be expected to identify the material of concern, isolate the area, and perform evacuations provided they avoid contact with the released material. These functions are considered defensive.
 2. Hazmat Operations – individuals trained to the level of response are expected to perform the duties of hazmat awareness with the addition of performing decontamination, control material runoff through various defensive means, operate and recognize various values of various chemical monitors and paper test strips, and establish initial command of the incident. These functions are considered defensive.
 3. Hazmat Technician – Individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive offensive role than a first responder at the awareness and operations level in that they will approach the point of release in order to plug, patch or otherwise stop the release of a hazardous substance.
 4. Hazmat Specialist - Individuals who respond with and provide support to hazardous materials technicians. Their duties parallel those of the hazardous materials technician; however, those 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 regarding site activities.
 5. Hazmat Incident Command - an incident commander that will be responsible for hazmat incident activities, including the development of strategies and tactics, and the ordering and release of resources.
- D. Hazardous Materials Spill – Denotes the actual or potential release of a substance (gas, liquid, solid or energy) which threatens the health, safety or welfare of the citizenry or the destruction of property, either public or private.
- E. Isolation Zones – These are geographic areas that the incident scene is divided into based on the level of exposure.
1. Exclusion Zone – (Hot Zone, Restricted Zone, Hotline) The area of maximum hazard. Area restricted to essential personnel wearing proper protective clothing and having an assigned specific activity.
 2. Contamination Reduction Zone (CRZ) – (Warm Zone, Limited Access Zone, Contamination Control Line) Surrounds the exclusion zone and is also a restricted area. This is where the decontamination area is located. The level of personal protection required may be less than that of the exclusion zone.
 3. Support Zone – (Cold Zone, Isolation Perimeter) The unrestricted area beyond the outer perimeter of the CRZ.
- F. NEFDAHMRT – Northeast Tarrant County Hazardous Materials Response Team.

- G. NRHW – Combined dispatching center for North Richland Hills, Richland Hills, Haltom City, and Watauga.
- H. Protection Zone – A functional area which defines the boundaries to be evacuated or which sheltering in-place is the method of protection.
- I. Team Member – Personnel who have been assigned by their member departments to the NEFDAHMRT

III NEFDAHMRT CITIES RESPONSIBILITIES

- A. Each participating city shall assign members of their department for duty on the NEFDAHMRT. These assignees shall receive training to the Hazardous Materials Technician level.
- B. Each participating city shall appoint a team member to act as that cities Hazmat Team Coordinator. This person is responsible for the quarterly training, attendance at called meetings, and to insure post response critiques are completed.
- C. Each participating city shall have a minimum of two (2) persons, on duty per shift, for the NEFDAHMRT.
- D. Each NEFDA city shall train all their personnel to the level of hazmat operations in order to perform decontamination procedures. The event city will be required to conduct decontamination procedures
- E. Each NEFDA city is responsible for medical treatment, triage, and transportation within their jurisdiction. At any Level 2 hazmat incidents, or at the request of incident command for Level 1 incidents, the event city shall make available a MICU in standby status at the hazmat incident.
- F. A medical surveillance and fit testing program shall be implemented by the respective NEFDAHMRT team member's city and in accordance to OSHA 29 CFR 1910.120(b)(1)(ii)(E), NFPA 1582 and 1404. An initial baseline heavy metal testing shall be required and obtained again after known or suspected exposures.
- G. Medical exams will be provided for any member when deemed necessary by the hazmat technician's employer, due to an unusual exposure or other unusual circumstance.
- H. All NEFDAHMRT members will be required to be medically certified as fit for participation in the program.
- I. Each member city of NEFDA shall maintain jurisdictional responsibility of their own incident. This responsibility will include:
 - 1. Ultimate authority of the incident scene.
 - 2. Responsibility for financial obligation relative to hazard mitigation, including but not limited to, reimbursement to the NEFDAHMRT for any and all equipment and/or supplies used.

3. Scene safety for all participants and civilians.
4. Request for assistance from outside agencies and other city services.

IV COMMAND RESPONSIBILITIES

- A. The Incident Command System, as outlined by the National Incident Management System (NIMS), shall be used at all hazardous material emergencies that the NEFDAHMRT has been called to.
- B. Incident Commanders shall have the training and knowledge required by 29 CFR 1910.120. It is recommended that the Incident Commander have Hazmat Incident Command training to augment 29 CFR 1910.120.
- C. The first arriving Fire Department Officer at the scene of a hazardous material incident shall immediately notify their Dispatch Center, taking into full account the limitations enforced by the circumstances involved, and to the best of his/her ability provide the following information:
 1. Exact location of the incident if different from announced.
 2. Type(s) and amount of material(s) involved.
 3. Extent of personal injuries and/or property damaged.
 4. Whether the material(s) has entered the storm drain or sanitation system, or is likely to do so.
- D. The first arriving Fire Department Officer will take the following action(s):
 1. Call for the NEFDAHMRT if they are needed at the incident. The level of response requested should be determined and relay through their Dispatch Center.
 2. Isolate and hold all persons who have been contaminated.
 3. If possible, apply appropriate control techniques.
 4. When required, start immediate evacuation of the area affected and establish an isolation and protection zone.
 5. To the best of his/her ability, restrict the flow of hazardous materials or the run off from the fire streams from entering storm drains, watershed areas, or the sewer system.
 6. Continue Command until the incident has been resolved or until properly relieved by a senior Fire Department Officer.

V INCIDENT COMMANDERS (CHIEF OFFICERS)

- A. Establish a field Command Post outside of the safety perimeter and announce said location to The Dispatch Center. This location should be relayed to the NEFDAHMRT because this is the location they should respond to for pertinent information about the incident. All procedures taken, up to the team's arrival, and data collected should be available at this location.
- B. Establish a staging area for support personnel and equipment, both civilian and fire department.
- C. Take command of onsite operations working directly with and supporting the NEFDAHMRT and make decisions based upon the knowledge of the responding team members.
- D. Direct the efforts of all cities and outside agencies involved in emergency operations related to the incident by acting through respective representatives, who will retain control of their respective forces. This will maintain a direct route of communications for the team to receive the necessary resources for mitigation of the incident.
- E. Determine, as soon as possible, if the situation creates a real or potential threat to life, health, or property. If it does, Command will designate that both a protection and isolation zones be established.
- F. Establish a medical/triage group as needed.

VI RESPONSE LEVELS AND NOTIFICATION

There are two (2) levels of response recognized by the NEFDAHMRT. The purpose of the two (2) levels of response is to not place any unnecessary strain on department personnel, thus reducing the loss of protective services to each of the respective NEFDA departments. Hazardous material incidents tend to be quite lengthy in duration, and any avoidable strain on manpower should be considered by the Incident Commander. The level of response shall be the sole responsibility of the Incident Commander, based upon his/her specific departmental needs in handling a hazardous material incident. The NEFDAHMRT shall operate under the respective Incident Commander.

A. Level 1

- 1. This level of response shall be primarily for the control of small, easily contained incidents, or for the purposes of complementing equipment already available to the NEFDA city.
- 2. The North Richland Hills Fire Department will respond with three (3) hazmat techs on Haz22. Roanoke Fire Department will respond with two (2) hazmat techs on Haz66. At the discretion of the battalion chief, an engine with three (3) additional hazmat techs can be added.
- 3. The North Richland Hills on-duty Battalion Chief will respond along with the NEFDAHMRT units.
- 4. Personnel from the North Richland Hills and Roanoke will assist in the utilization and maintenance of equipment and supply inventory.

B. Level 2

1. This level of response is for manpower from NEFDAHMRT participating cities in addition to all Hazmat Units/equipment outlined in a Level 1 response.

VII NOTIFICATION

- A. Notification of the NEFDAHMRT shall be at the discretion of the NEFDA City's Incident Commander. The Incident Commander shall, upon determination of need, request a response from the NEFDAHMRT, specifying the appropriate level of response, and supply any available pertinent information.
- B. When a hazardous materials spill occurs, the requesting city's Incident Commander should consider the following breakdown in the flow of information that is pertinent. This breakdown is based upon the understanding of NIMS.

VIII DISPATCHING THE TEAM

A. Level 1

1. The member city requesting the NEFDAHMRT for a Level 1 response shall notify the NRHW Dispatch Center and request a Hazardous Material Level 1 Response.
2. Information needed by NRHW Dispatch.

Name of city "requesting assistance"
Nature of incident (size/quantity/amount of product)
Address of incident
Direction unit should arrive from
Level of response
Response code (1 or 3)
On scene contact information

B. Level 2

1. This is a full response incident, requiring equipment and personnel.
2. The city requesting the NEFDAHMRT for a Level 2 incident shall contact the NRHW Dispatch Center, the same as for a Level 1 incident.
3. NRHW Dispatch Center is responsible for contacting NEFDAHMRT cities for assistance at an incident:

Bedford Fire Department
Eules Fire Department
North Richland Hills Fire Department
Richland Hills Fire Department
Roanoke Fire Department
Southlake Department of Public Safety
Trophy Club Fire Department
Watauga Fire Department
Westlake Fire Department

4. Cities receiving requests for team member response shall forward an estimated time of arrival of those members to the requesting city, as soon as it is available.

IX INCIDENT ARRIVAL

- A. Following the briefing from the Incident Commander, the NEFDAHMRT will select a Hazmat Branch Director. This person must be a member of the NEFDAHMRT and a hazardous material technician. It is recommended that the Hazmat Branch Director not be a member of the incident city.
- B. The NEFDAHMRT will confirm the information from the briefing and begin to formulate a recommended course of action. The NEFDAHMRT will then take charge of the Exclusion and Contamination Reduction Zone while operating under the Incident Commander. The NEFDAHMRT will inform the Incident Commander of their recommended course of action. It shall be the responsibility of the Incident Commander to accept or deny this course of action and/or recommendation.

X INCIDENT PROCEDURES

- A. The following procedures are to be used as a guide only. One or more steps may be added or deleted to better suit the needs of a particular incident and/or situation.
 1. Isolation Zone

Exclusion Zone
Contamination Reduction Zone
Support Zone
 2. Identify Problem

Accident
Spill/Leak
Rescue/Life Safety
Fire Hazard
Environment
Weather Conditions
 3. Identify Product (Minimum of three (3) references)

Company Representative/shipping papers
Hard copy literature
Safety data sheets
NEFDAHMRT Computer Data
 4. Confirm Product

Double check references
Phone shipper (if needed)
 5. Select Protective Clothing

Select the Personal Protective Ensemble (PPE) adequate to protect against the risks.
Use the manufacturer's compatibility charts or other references available in the Hazmat Unit.

6. Develop a Plan of Action

Have a backup plan
Establish Divisions/Groups/Teams
Be prepared to modify actions
Monitor weather conditions

7. Contain Product

Dam/Dike
Diversion
Filter
Remove uninvolved materials

8. Locate Leak "if not known"

From a distance
Determine equipment needed to repair

9. Control Leak

Valve shutdown
Patch
Plug
Over-pack
Disperse "Water spray"

10. Stabilize Situation

Foam suppression
Neutralize/Dilute
Absorb/Adsorb
Cool containers
Remove ignition sources

11. Decontaminate

Personnel
Equipment

12. Medical Evaluation

Medical screening of all personnel
Exposed personnel at site
Follow-up at medical facility

13. Terminate Incident

Complete incident report

Complete inventory form
Complete release from liability form
Notification of hazardous material spill to local, state, or federal agencies if required

14. Post Incident Analysis

Due to the complex and chaotic nature of emergency response, very few incidents go perfectly. A post-incident analysis is probably the best way to ascertain if an incident was handled properly. This is a comprehensive formal review of the emergency. It should be conducted by the Incident Commander from the incident city and include input from each participating agency. When an incident is to be reviewed by post incident analysis, the host city shall contact the NEFDA Post Incident Analysis sub committee and request their attendance in the incident review.

The post-incident analysis should be a positive learning experience. It is to be used to make future incidents more productive, safe and manageable. A responsible party from each agency should discuss what part their agency played, why it was done, and how it may be done more effectively in the future.

If deficiencies are noted during the critique, it is imperative they be addressed. The Hazmat Team Coordinator is responsible for addressing, resolving, and/or forwarding critiques, problems, and/or solutions to the Hazmat team Coordinators OR NEFDA Training Chiefs OR NEFDA Fire Chiefs.

XI OPERATING GROUPS

- A. The NEFDAHMRT will consist of a minimum of three (3) separate and distinct functions, each under the overall supervision of the Hazmat Branch Director. Each function will have a Supervisor. Group Supervisors shall be selected by the Incident Commander and/or Hazmat Branch Director.
- B. The Hazmat Branch Director shall be responsible for the personnel accountability of all persons working inside the Exclusion and Contamination Reduction Zones.
- C. The three functions are:
 - 1. Safety
 - a. Hazmat Safety Officer shall be assigned by the Hazmat Branch Director.
 - b. The Hazmat Safety Officer shall have knowledge in the operations of hazardous materials emergency operations.
 - c. The Incident Safety Officer is responsible for overall incident site safety and will coordinate with the Hazmat Safety Officer to notify the Incident Commander and/or Hazmat Branch Director of any unsafe conditions or operations that they observe.
 - d. The Hazmat Safety Officer shall be included in the decision making process on any and all Hazmat operations, including pre-entry briefings.
 - e. The Hazmat Safety Officer shall be responsible for time keeping of the event.

- f. The Incident and Hazmat Safety Officers shall have the authority to stop any and all activities that they determine to be unsafe.

2. Operations

a. Resource

A member of the NEFDAHMRT is recommended for this position

Chemical information

Selection of personnel protective ensemble (PPE)

Documentation of the incident

Inventory of equipment used

Copies of the incident and inventory form are to be left with the Incident Commander prior to the hazmat unit clearing the incident.

b. Exclusion Zone

Rescue

Containment

Control

- c. Entry into the exclusion zone shall be restricted to hazmat technician level trained personnel or those possessing particular knowledge of the situation at hand. These personnel shall be in the appropriate level of protective clothing and will function under direct control of the Hazmat Branch Director. Entry will not be made into the exclusion zone until permission is obtained by agreement between Hazmat Branch Director and the Operations Section Chief and/or Incident Commander.
- d. The level of protective clothing for Exclusion and Contamination Reduction Zone operations shall be specified by the Hazmat Branch Director and advise the Operations Section Chief and/or Incident Commander.
- e. Generally, operations shall be conducted utilizing teams of two (2) personnel each, a primary entry team and a backup entry team. The backup entry team shall remain at the entry/exit point to the Exclusion Zone and ready to make entry if needed.
- f. Prior to entry into the Exclusion Zone, both primary and backup entry teams will be fully briefed as to expected conditions, goals, decontamination, etc. Members will discuss emergency procedures on each entry as the situation warrants.
- g. All entry teams will have a means of communicating (two-way radio and/or hand signals) with the Hazmat Branch Director, Operations Section Chief, and the Hazmat Safety Officer. Also, entry teams will have monitoring equipment appropriate for the incident.
- h. The maximum working times for entry personnel on SCBA's will be determined during the pre-entry briefing with the Hazmat Branch Director and Incident/ Hazmat Safety Officers.

3. Decontamination

- a. Consists of hazmat operation personnel from the requesting city and, depending upon level of response requested, members of the NEFDAHMRT as technical advisors.

- b. The Decontamination Supervisor, in conjunction with the Hazmat Branch Director, is responsible for determining the most appropriate decontamination procedures and managing the decontamination process. The Decontamination Supervisor will determine when tools and equipment may be released from the Contamination Reduction Zone. No items shall be removed without approval.
- c. The decontamination area shall be established in the Contamination Reduction Zone, adjacent to the entrance/exit corridor to the Exclusion Zone.
- d. The Decontamination Supervisor is responsible for the inspection of 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 appropriate.
- e. It must be assumed that items or persons coming from the Exclusion Zone are contaminated.
- f. During the decontamination process, all personnel working in the decontamination area must be adequately protected from contamination.
- g. The Decontamination Supervisor will identify and require the appropriate protective equipment.
- h. Members of the decontamination team and their equipment will also require decontamination.
- i. Any run-off or residue from the decontamination procedures must be retained for proper disposal.
- j. The Decontamination Supervisor shall be responsible for the evaluation and monitoring of the physical condition of all personnel working in the Exclusion and Contamination Reduction Zones, and shall arrange for further medical evaluation and treatment of victims and/or personnel as needed.
- k. Patients in need of medical treatment should be removed from the source of contamination as quickly as possible, but remain within the CRZ perimeter. These patients must not be allowed to contaminate further areas or persons. The Decontamination Supervisor may release individuals who are substantially decontaminated to the care of EMS and direct them to medical facilities for further evaluation or decontamination.
- l. The transportation of decontaminated individuals and the notification to the hospital(s) of these incoming patients, will be handled by the Treatment/Triage Officer or the Incident Commander.
- m. The Decontamination Supervisor shall ensure that all persons working in the CRZ or Exclusion Zone have a pre and post entry medical screening. Failure of post-entry vital signs to return to within 10% of pre-entry levels within 10 minutes shall exclude that person from re-entry in one of those zones.
- n. When persons are decontaminated by the decontamination team, they may be released to leave the Contamination Reduction Zone. This includes fire department

personnel, other emergency personnel, civilians, and patients. The Decontamination Unit Leader will determine when it's appropriate to release custody of protective clothing, personal effects, and equipment. Individuals may also be directed to shower, change clothes, or take other secondary decontamination measures.

XII PROTECTIVE CLOTHING

- A. The choice of protective clothing will depend upon the hazards and the properties of the involved materials. The following levels of protection shall be employed by the NEFDAHMRT as appropriate.
1. Level A – To be selected when the greatest level of skin, respiratory, and eye protection is required.
 2. Level B – The highest level of respiratory protection is necessary but a lesser level of skin protection is needed.
 3. Multi-threat suits – The highest level of respiratory protection OR the concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met. The material provides a lower level of skin protection than Level A but greater than Level C. Preferred level of PPE for structural collapse and confined space operations.
 4. Level C – The concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met.
 5. Level D – A work uniform affording minimal protection, used for nuisance contamination only.
 6. Self-Contained Breathing Apparatus (SCBA) – air tank with harness and facemask that provides the highest level of respiratory protection in Immediately Dangerous to Life and Health (IDLH) conditions.
 7. Powered Air Purifying Respirators (PAPR) – an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements (filters) to the users SCBA face mask. Operated in environments of known oxygen concentration.
 8. Air Purified Respirator (APR) – a SCBA face mask with specific filters or cartridges that filter ambient air from contaminants of concern. Operated in environments of known oxygen concentration.
- B. All encapsulated garments shall be tested and results documented annually.
- C. Any personal protective garments that have been donned, placed in service or contaminated, will not be returned to service on the Hazardous Materials Unit.