NEW JERSEY HAZMAT EMERGENCY RESPONSE COURSE

STUDENT GUIDE **COURSE NUMBER: 06088**

LEVEL 1 - FIRST RESPONDER
DOMESTIC PREPAREDNESS
CBRNE OPERATIONS

PRESENTED THROUGH:
NEW JERSEY STATE POLICE-HOMELAND SECURITY BRANCH
SPECIAL OPERATIONS SECTION, TECHNCIAL RESPONSE BUREAU
HAZARDOUS MATERIALS RESPONSE UNIT (HMRU)

BENCHMARKED FROM THE DEPARTMENT OF DEFENSE
"DOMESTIC PREPAREDNESS TRAINING PROGRAM"

STUDENT MANUAL

4th Edition 0404

Domestic Preparedness; Operations

Training Goal:

At the conclusion of this course, students will be able to demonstrate a knowledge of the role of Level 2 trained responders in dealing with a Nuclear, Biological, Chemical agent attack.

Student Materials:

WMD Operations

Domestic Preparedness; Operations

Preface

The Federal Bureau of Investigation (FBI) defines terrorism as: "The unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives."

For years, we have viewed terrorism as something that happens in other countries. If Citizens of the United States were victims of terrorist attacks, they must have been overseas or on international flights or cruises in dangerous areas. The events at the World Trade Center in New York and Oklahoma City have shattered this view forever. The citizens and facilities that we are charged to protect can become the targets of international AND domestic terrorists at any time.

Terrorist attacks with conventional weapons such as firearms, explosives or incendiary devices seems the most likely scenario but we must also plan for the possibility of nuclear, chemical and biological.

While federal agencies will have primary responsibility for the investigation of terrorist attacks, local law enforcement and emergency management will have the vital role of first responder when their local setting becomes the target.

As an emergency responder in your community, you need to be aware of protocols for identifying that a problem exists, as well as how to isolate the problem, gather basic information, and report what you have found. Remember that if you are the "first on the scene" at an attack, your actions are critical in initiating a proper response.

Every county and municipality in New Jersey should have a viable plan for countering terrorism as part of the response roles outlined in its EOP. Hopefully, there will never be a need for it to be used.

The Domestic Preparedness Training Program only addresses Nuclear material, and Biological and Chemical (NBC) agents/devices. They can also be referred to as Weapons of Mass Destruction (WMD). The two terms are synonymous.

NBC weapons' differ from other terrorist weapons in that they employ military chemical and biological warfare agents or radioactive materials as a primary ingredient. You will learn more about these in the next few modules, but for a brief definition:

Chemical agents are supertoxic chemicals used for the purpose of poisoning victims. They are similar to hazardous industrial chemicals, but hundreds of times more toxic. Contrast this with bombing an oil refinery to create a massive fire, which constitutes a terrorist attack, but not an NBC attack.

Biological agents are living germs that will cause disease in people. Some of these are deadly to animals as well, though they are not the primary targets. Toxins are a special type of poisonous chemicals categorized as biological agents because they were created by living organisms. They generally behave like chemical agents and serve the same function, to poison people.
Radiological materials can pose both an acute and long term hazard to humans. In many ways, they behave like some of the chemical agents in that they cause cell damage. A major difference is that the radiological agents do not necessarily have to be inhaled or come in contact with the skin to do damage. Some types of radiation, (like x-rays), can penetrate significant layers of protective material.

This course will build on the knowledge you already possess by comparing HAZMAT incidents with NBC Terrorism incidents.

CBRNE; Operations Course Introduction

Module 1: Course Introduction (Operations Training - course #06088)

Training Objectives:

At the conclusion of this course, students will be able to demonstrate a knowledge of the role of Level 2 trained responders in dealing with a Nuclear, Biological, Chemical agent attack.

Video: "Attack at Harford Mall"

NBC Operations Training

The scenes you have just seen from the Harford Mall attack begin to describe the public expectation of the Operations Level First Responder. We will revisit the response as it unfolds during this course and examine it.

Focus

The focus of the Domestic Preparedness Operations Program is on NBC agents/devices, and because these materials were invented primarily for military use, much of the terminology associated with them is military in nature. These agents were specifically designed to injure or kill, and as a result, will affect the procedures employed to address hazardous materials incidents. Today we will discuss those differences. Your mission is to bring order from confusion and defeat the terrorist by minimizing the effects of these weapons.

Course Goals

The purpose of this course is to train you to the Domestic Preparedness Operations Level. These classes are designed to increase the depth of knowledge of responders confronted with the challenges created when a terrorist incident involves the employment of chemical, biological, or radiological agents (all of which are hazardous materials), collectively known as NBC agents. Following its completion, you should be able to:

1. Identify the correct operations level defensive actions to be taken in the event a terrorist employs an NBC agent.
2. Identify appropriate personal protective equipment.
3. Select appropriate detection and identification equipment that might be employed in response to deployment of an NBC agent.
4. Understand emergency decontamination procedures that can be employed at the Operations Level.

Administrative Notes

1. Because of the origin, much of the material we shall cover is military in nature. This is mostly true because, until now, responding to the employment of these agents was only a military mission resulting from a military operation. Unfortunately, this is no longer the case, and now other individuals may also possess these weapons.

2. The modules that will be presented during this course are only designed to address those issues that are peculiar to a response to the employment of NBC weapons. As such, they will not, in most cases, dwell on material you have already been taught.

Overview

The course will concentrate on five blocks of instruction:

"Responder Actions" will focus on Operations Level defensive actions responders should take to minimize hazards, both to themselves and the general public.

"Chemical Downwind Hazard Prediction" will provide responders a quick and rapid method for predicting the boundaries of the downwind vapor hazard associated with a release of any of the chemical agents into the atmosphere.

"Protective Equipment" will provide an overview of personal protective equipment. It will also address the limitations of self protection when using Structural Fire Protective Clothing (SFPC) and Self Contained Breathing Apparatus (SCBA).

"Detection and Identification Equipment" will provide an overview of the various types of detection and identification equipment available.

"Emergency Decontamination Techniques" (strip, flush, cover) will address the differences between a normal HAZMAT decontamination operation and one involving a chemical agent, and briefly cover emergency decontamination techniques.

CBRNE; Operations

Responder Actions

Module 2: Responder Actions

Training Objectives:

At the conclusion of this module, students will be able to:

1. Describe actions appropriate to the operations level of training and equipment in response to an incident involving NBC agents/devices.
2. Identify the correct response based upon the considerations provided during the class.

CBRNE; Operations

Chemical Downwind Hazard Analysis

Module 3: Chemical Downwind Hazard Analysis

Training Objectives:

At the conclusion of this module the students will:

1. State the reasons for conducting a downwind hazard analysis.
2. Describe the factors which affect the downwind travel of a toxic plume, and the limitations of a prediction.
3. Be able to construct a simplified downwind hazard prediction.

CBRNE; Operations Personal Protection

Module 4: Personal Protection

Training Objectives:

At the conclusion of this module, students will be able to:

1. State protection offered by the various levels of protective clothing
2. Describe their response capability based on their assigned level of protective clothing and training

practiced with it in a safe environment). If you see indications of nerve or blister agent employment, **DO NOT ENTER THE HOT ZONE IN BUNKER GEAR!** - or you, too, will become a victim.

A response team requires maximum respiratory protection when entering atmospheres containing unknown substances, or entering atmospheres containing known substances in unknown concentrations.

In addition, unless you are certain you are not dealing with a blister or nerve agent, you need to protect your skin from chemical agent liquids and aerosols. Liquid chemical agent can be transferred to you in numerous ways, including:

a. Helping victims,

b. Helping other responders,

c. Walking through contaminants, and

d. Overspray from victim decontamination operations (e.g., hosing down of victims).

Key Points

a. Tests using agent simulants appear to indicate that your Structural Firefighter Gear with SCBA provides adequate respiratory protection, but little protection against chemical agent liquids and mustard agent vapors.

b. Without proper protective clothing and training, you are limited in the responder activities **you can safety perform.**

CBRNE; Operations Detection & Identification

Module 5: Introduction to Detection and Identification

Training Objectives:

At the conclusion of this module, the students will be able to:

Describe the types of detection and identification equipment available to the first responder.

CBRNE; Operations

Emergency Decontamination Procedures

Module 6: Emergency Decontamination Procedures

Training Objectives:

At the conclusion of this module, students will be able to:

1. State differences in decontamination techniques presented by NBC agents vs. typical hazardous materials.
2. Describe decontamination levels
3. Describe emergency decontamination techniques
4. Describe several decontaminants

One of the first priorities after a nuclear, biological or chemical (NBC) incident is agent containment and decontamination. The speed and organization of the response team, the establishment of control around the Incident Site, and the timely application of decontaminant will be the keys to success. We will discuss how to accomplish such a response by focusing on the difference between conventional HAZMAT incidents and those involving NBC agents.

Decontamination Differences from a Typical Hazmat Incident

Large Number of Victims - is probably the first major delta between normal HAZMAT and NBC incidents. You may be required to control, triage, decontaminate and track hundreds if not thousands of people at the site.

Scene Control - may involve a larger area, a mass casualty situation, with numerous responders who all want to "help", and a huge press response seeking information on the incident.

Rapid Response - because of the speed at which some of the chemical agents work against the body, decontamination must be swift in order to avoid more casualties.

Major Resource Intensive - a response of this magnitude will require more personnel and material than is normally on hand. This requires you to do contingency planning, before you are ever faced with the situation.

Run-off Control - an active effort to confine run-off from decontamination operations reduces the spread of the hazard. Because of its potential toxicity, decontamination runoff should be kept away from sewer drains, ground water, streams, and watershed areas.

Crime Scene/Evidence Preservation - your normal HAZMAT incident site is not a crime scene. In addition to decontaminating the area, evidence must be preserved for eventual use in apprehending and prosecuting the perpetrators.

Decontamination Levels

There are two levels of decontamination; *Emergency* and *Technical.* They combine to cover the rapid decontamination of victims on site and the more deliberate decontamination of the responders.

Emergency Decontamination - is employed to save lives by neutralizing agent from the skin.

CBRNE; Operations: Practical Exercise

Module 7: Operations: Practical Exercise

Training Objectives:

At the conclusion of the exercise, students will
1. Develop a list of available resources and assets to respond to an NBC incident
2. Develop a site management plan for the NBC incident scene
3. Describe response to specific challenges.