

# Program of Instruction

## Course Syllabus

**Course Title:** Hazardous Materials Technician B

**Course Duration:** 40 hours

**Program:** Hazardous Materials Program

**Level of Training:** Performance – Offensive (OSHA Technician)

**Course Prerequisites:** Hazardous Materials Technician A

### Course Description:

This course prepares local responders to operate as a team within the NIMS at a CBRNE (Chemical, Biological, Radiological, Nuclear, or Explosive) WMD Event. Statewide WMD Response: Technician “A” and “B” are required to satisfy the Technician level of NFPA 472. Students are trained to meet the following performance requirements: know NIMS and Unified Command; know self-protection measures and rescue and evacuation procedures for WMD. Students are trained to mitigate incidents involving hazardous materials. Students will show an understanding of monitoring, detection, and basic skills needed to evaluate and work at an incident such as, identifying basic hazard and risk-assessment techniques; selecting and using proper personal protective equipment. Students will demonstrate an understanding of relevant standard operating guidelines and termination procedures for incidents involving the release of hazardous materials and/or CBRNE agents.

### Course Content:

#### Module: 1

Title: The Big Picture

Duration: 1 hour

#### Terminal Learning Objective:

At the conclusion of this module, the student will *analyze* an incident and be able to decide on a strategy from looking at the Big Picture.

**Module: 2**

Title: Advanced Personal Protective Equipment and Fit Testing

Duration: 2 hours

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* proper selection, care and use of personal protective clothing.

**Module: 3**

Title: Exposure Guidelines

Duration: 1 hour

Terminal Learning Objective:

At the conclusion of this module, the student will *describe* how to use different toxicology guidelines to assist in the development of emergency response protection strategies.

**Module: 4**

Title: Advanced Monitoring

Duration: 3 hours and 45 minutes

Terminal Learning Objective:

At the conclusion of this module, the student will *understand* when and how to employ the use of specialized monitoring techniques at a hazardous materials incident.

**MC 306 Demo and Practical**

Duration: 3 hours and 30 minutes

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* the proper technique to control situations involving highway tank trucks.

**Railcar Demo and Practical**

Duration: 4 hours

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* the proper technique to control situations involving railcars.

**Module: 5**

Title: Sampling

Duration: 4 hours

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* the procedure for collecting a solid and liquid sample utilizing the State Protocol.

**Module: 6**

Title: Rescue

Duration: 4 hours

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* several techniques for removing victims from a hazardous environment in a safe and efficient manner.

**Module: 7**

Title: Decontamination Review

Duration: 1 hour and 10 minutes

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* techniques for decontaminating ambulatory and non-ambulatory responders, as well as large numbers of people.

**Module: 8**

Title: Radiological Emergencies

Duration: 2 hours and 50 minutes

Terminal Learning Objective:

At the conclusion of this module, the student will *demonstrate* detecting and operating at a radiological emergency.

**Tabletop Scenario – See Drill Sheet for Specifics**

**Radiological Incident – See Drill Sheet for Specifics**

**Final Incident – See Drill Sheet for Specifics**



**Evaluation Strategy:**

Written and practical skills testing are conducted at the end of the course. In addition, simulated evolutions involving various hazardous materials situations are conducted throughout the course.

**References:**

*APD 2000 User's Manual.* Smiths Detection Inc., 1998-2005.

*A General Guide to Tank Cars.* Union Pacific Railroad, January 2010.

Burke, Robert. "The Waverly Propane Explosion 25<sup>th</sup> Anniversary: What Has Changed?" *Firehouse Magazine.* February 2003.

*Emergency Response Planning Guidelines & Workplace Environmental Exposure Levels Handbook.* Fairfax, VA: AIHA Press, 2008

*Guardian Reader Operation Manual.* Tetracore, Inc., 2003.

*Ludlum Model #2241-2 User's Manual.* Ludlum Measurements Inc., 2000.

*NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents 2013 Ed.* Quincy, MA: National Fire Protection Association, 2013

Noll, Gregory and Michael Hildebrand. *Gasoline Tank Truck Emergencies.* Red Hat Publishing Co., 1996.

Noll, Gregory, Michael Hildebrand and James Yvorra. *Hazardous Materials: Managing the Incident 3<sup>rd</sup> Ed.* IFSTA. Red Hat Publishing Co., 2005

Sharry, John A. and Wilbur L. Walls. "LP Gas Distribution Plant Fire." *Fire Journal.* 1974.

U.S. Department of Labor, *Code of Federal Regulations: Labor 29 CFR 1910.120.* Washington, D.C., Office of the Federal Register, National Archives and Records Administration, 1996.

U.S. Department of Labor, *Code of Federal Regulations: Transportation 49 CFR Parts 100 to 77.* Washington, D.C., Office of the Federal Register, National Archives and Records Administration, 1995.

# Course Schedule

## DAY ONE

<u>Event</u>	<u>Duration</u>
Orientation and Introductions	15 minutes
Module 1: The Big Picture	1 hour
Module 2: Advanced PPE & Fit Testing	2 hours
Module 3: Exposure Guidelines	1 hour
<b>Lunch</b>	
Module 4: Advanced Monitoring	3 hours and 45 min

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## DAY TWO

<u>Event</u>	<u>Duration</u>
Science Activity	30 minutes
MC 306 Demo	2 hours
<b>MC 306 Practical</b>	1 hour and 30 min
<b>Lunch</b>	
Railcar Demo	2 hours
<b>Railcar Practical</b>	2 hours

## DAY THREE

<u>Event</u>	<u>Duration</u>
Module 5: Sampling	2 hours
<b>Sampling Practical</b>	2 hour
<b>Lunch</b>	
Module 6: Rescue	1 hour and 10 min
<b>Rescue Scenarios</b>	2 hours and 50 min

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#### DAY FOUR

<u>Event</u>	<u>Duration</u>
Module 7: Decontamination Review	1 hour and 10 min
Module 8: Radiological Emergencies	1 hour and 50 min
<b>Radiological Monitoring Practical</b>	2 hours
<b>Lunch</b>	
<b>Radiological Incident</b>	3 hours

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#### DAY FIVE

<u>Event</u>	<u>Duration</u>
<b>Final Incident</b>	4 hours
<b>Lunch</b>	
Review	1 hour
Class Wrap up, CEQ's	1 hour
Test	2 hours