HAZMAT GUIDELINES

For Hazardous Materials Response, Planning And Prevention/Mitigation Training

2016 EDITION

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

FEMA

Guidelines for Hazardous Materials Response, Planning and Prevention/Mitigation Training

2016

Executive Overview

The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.6 million mile pipeline transportation system and the nearly one million daily shipments of hazardous materials by land, sea, and air. PHMSA's mission is to protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives. The Hazardous Materials Emergency Preparedness (HMEP) grant program supports PHMSA's mission by funding public and first responder efforts to plan for, prepare for, and improve the nation's response to hazardous materials transportation incidents.

The HMEP grant program was established in 1990 by the Hazardous Materials Transportation Uniform Safety Act (HMTUSA). In 1992, federal hazardous materials law (49 U.S.C. 5101 et seq.) established a national registration program for shippers and carriers of hazardous materials. The law also established collection of fees from registrants. These fees finance emergency preparedness planning and training grants; development of training curriculum guidelines for emergency responders, technical assistance to states, political subdivisions, and federally recognized tribes; publication and distribution of the *Emergency Response Guidebook*; and administrative costs for operating the program.

Currently, the HMEP grant program is designed to allow grantees the flexibility to implement training and planning programs that address differing needs for each location based on demographics, emergency response capabilities, commodity flow studies, and hazard analysis. Governors in each state, or their counterparts within territories or tribes, designate an agency to receive HMEP grant funds. The HMEP grant program leverages Federal resources with local and state assets to support the nation's first responders. To assist grantees and the response community with emergency planning and training, HMTUSA authorized the United States Department of Transportation to develop guidelines that would ensure that effective training was conducted using grant funds.

Management and quality control of training are the responsibility and authority of localities as well as states, territories, and tribes. The Federal role is to provide support and assistance to state, tribal, and local training management in curriculum development and revision and to help improve the quality of training delivery.

The HMEP Guidelines effort includes (1) the development and maintenance of guidelines against which courses can be assessed by state, tribal, territory and local training managers and (2) the implementation and maintenance of support systems to help state, tribal, territory and local training offices improve key elements that affect the quality of training, such as needs assessment, training plan development, testing, and assimilation of existing courses and materials from other jurisdictions.

The 2016 Guidelines for Public Sector Hazardous Materials Response, Planning and Prevention/Mitigation Training (Guidelines) constitutes one component of the overall program to provide assistance and support to state, tribal, territory and local hazardous materials training initiatives; completed through an interagency agreement with the Federal Emergency Management Agency.

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Guidelines Overview

The *Guidelines* is designed to be used as a working reference manual by public sector managers of hazardous materials training. It is organized and indexed to facilitate user cross-referencing of sections and content. Most material addresses the content of courses and the tools to be used in self-assessment of courses. However, course content constitutes only one factor in the training equation that determines the competency of public sector employees involved in hazardous materials planning and response. Therefore, other HMEP curriculum support programs provide additional information and guidance for the public sector training management responsibilities described above.

The *Guidelines* is organized into four components:

- *Introduction*
- *Hazardous Materials/WMD Incident Response Curriculum Guidelines*
- *Hazardous Materials Incident Planning Curriculum Guidelines*
- *Hazardous Materials Incident Prevention/Mitigation Curriculum Guidelines*

The *Guidelines* describe in detail the recommended and the required substance of training courses for response and planning for hazardous materials and terrorist incidents, and for prevention of hazardous materials incidents. The information consists primarily of competency requirements to be addressed. Objectives are organized by the response, planning and prevention/mitigation functions for which training should be conducted. Included are recommendations for the organization and structure of courses in each specific area, including considerations such as length of training, course methodology, exercise and activity design, equipment and facilities needed, topic-specific testing and evaluation considerations.

Hazardous Materials/WMD Incident Response Curriculum Guidelines

There are two tracks of objectives in each training category of the Hazardous Materials/WMD Incident Response Curriculum Guidelines. The first track, *required training*, describes minimum training requirements as defined by OSHA 19010.120(q). The second track, *recommended training*, recommends training objectives that reflect the training organization described in the NFPA 472 and 473 standards and other training recommendations incorporated by or developed by the *Guidelines* authors. Both tracks describe training levels that are the *minimum* training appropriate for the competencies in each section. They can be expanded by individual jurisdictions to better ensure effectiveness of training. The Hazardous Materials/WMD Incident Response Guidelines are organized into the following subsections:

- General Training Issues-Incident Response
- Awareness Level Personnel
- Core Competencies for Operations Level Responders
- Mission Specific Competencies for Operations Level Responders
- Hazardous Materials Technician
- Hazardous Materials Technician with a Specialty

- Incident Commander
- Specialist Employee C, B, and A
- Hazardous Materials Officer
- Hazardous Materials Safety Officer
- Hazardous Materials Basic Life Support Responder
- Hazardous Materials Advanced Life Support Responder
- Mission Specific Competencies for HazMat ALS Responder
- Hospital First Receiver
- Appendix: Related Standards and Special Topics

Hazardous Materials Incident Planning Curriculum Guidelines

The goal of the Hazardous Materials/WMD Planning Curriculum Guidelines is to enhance the knowledge, skills, and attitudes of the broad spectrum of State, Tribal, Territory and local training audiences who develop or contribute to the development of local hazardous materials response plans. The curriculum is structured into three training levels based on general skill requirements of the training audience: Planning Orientation, Planning Essentials, and Planning Specialties. Planning Orientation focuses on general awareness of the planning requirements and process and is targeted for general audiences. Planning Essentials focuses on the minimum competencies needed to develop local response plans and is targeted for local planning team members. Planning Specialties focuses on advanced, specialized planning skills that are needed by selected personnel at the State, Tribal, Territory and local levels to provide specialized roles and services in the planning process.

The Planning Curriculum Guidelines are organized into the following subsections:

- Planning Curriculum Overview
- Planning Awareness
- Core Planning Competencies
- Mission Specific Planning Competencies
  - Commodity Flow Study
  - Hazard Analysis and Threat Assessment
  - Capability Assessment'
  - Protective Actions Planning
  - Plan Implementation and Maintenance
  - Facility Planning
  - Planning for Public Education
- Appendix: Planning Guide Summaries, Planning Models, Terrorist Incident Planning Models

Hazardous Materials Incident Prevention/Mitigation Curriculum Guidelines

Hazardous materials prevention is based on the concept that the majority of accidents don't just happen – they are caused. While the use of chemicals may involve risk, the factors that precipitate most accidents are at some point under an organization's or an individual's control. Therefore, most chemical accidents and the damage they cause are by definition preventable.

The goal of the Prevention Curriculum Guidelines is to enhance the knowledge, skills, and attitudes of the broad spectrum of professional private and public sector State, Tribal, Territory and local training audiences who, in the course of their normal work, have the opportunity through better practices to prevent the risk and likelihood of occurrence of hazardous materials incidents. The Hazardous Materials Prevention Guidelines are organized into the following sections:

- Prevention/Mitigation Training Considerations
- Prevention/Mitigation Awareness
- Prevention/Mitigation Policy Development
- Community Prevention/Mitigation Program Management
- Prevention/Mitigation in Operations
- Design and Plans Review
- Facility Inspection and Enforcement
- Transportation Investigation and Inspection
- Appendix: Summaries of Prevention/Mitigation Standards and Regulations

Acronyms and Abbreviations

”MAP–21”	Moving Ahead for Progress in the 21st Century Act
ACGIH	American Conference of Governmental Industrial Hygienists
AHJ	Authority Having Jurisdiction
ALS	Advanced Life Support
AMA	American Medical Association
ANSI	American National Standards Institute
APCO	Association of Public-Safety Communications Officials
ARCHIE	Automated Resource for Chemical Hazard Incident Evaluation
ATF	Bureau of Alcohol, Tobacco, and Firearms
BLEVE	Boiling liquid/Expanding Vapor Explosion
BLS	Basic Life Support
BOCA	Building Officials and Code Administrators
CAA	Comprehensive Cooperative Agreement
CAAA	Clean Air Act Amendments of 1990
CAI	Common Air Interfaces
CALEA	Commission on Accreditation for Law Enforcement Agencies
CAMEO	Computer Aided Management of Emergency Operations
CAMH	Comprehensive Accreditation Manual for Hospitals
CAS	Chemical Abstracts Service
CBD-COM	Chemical and Biological Defense Command
CEO	Chief Executive Officer
CEPPO	Chemical Emergency Preparedness and Prevention Office
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHER-CAP	Comprehensive Hazardous Materials Emergency Response – Capability Assessment Program

Acronyms and Abbreviations (continued)

CNG	Compressed Natural Gas
CO	Carbon Monoxide
CONPLAN	Concept of Operations Plan
CPG	Comprehensive Preparedness Guide
CPG	Civil Preparedness Guide
CSEPP	Chemical Stockpile Emergency Preparedness Program
CSHO	Certified Safety and Health Official
DEA	Drug Enforcement Agency
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
DOT	Department of Transportation
EAP	Employee Assistance Programs
EHS	Extremely Hazardous Substance
EMS	Emergency Medical Services
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
ERI	Emergency Response Information
ESF	Emergency support functions
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FFV	Flexible-Fueled Vehicle
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration

Acronyms and Abbreviations (continued)

FRA	Federal Railroad Administration
FRERP	Federal Radiological Emergency Response Plan
FRP	Federal Response Plan
FWPCA	Federal Water Pollution Control Act
FY	Fiscal Year
hazmat	Hazardous Material
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
HBV	Hepatitis B Virus
HHS	Health and Human Services
HIV	HUMAN IMMUNODEFICIENCY VIRUS
HLPSA	Hazardous Liquid Pipeline Safety Act of 1979
HMEP	Hazardous Materials Emergency Preparedness
HMII	Hazardous Material Inspectors And Investigators
HMR	Hazardous Materials Regulations
HMRT	Hazardous Materials Response Team
HMTA	Hazardous Materials Transportation Act
HMTUSA	Hazardous Materials Transportation Uniform Safety Act
IAEA	International Atomic Energy Agency
IARC	International Agency for Research on Cancer
ICAO	International Civil Aviation Organization's
ICBO	International Conference of Building Officials
ICC	International Codes Council
ICP	Integrated Contingency Plan
ICS	Incident Command System
IDLH	Immediately Dangerous to Life or Health
IIA	Independent Inspection Agencies
IIA	Independent Inspection Agency
IMDG	International Maritime Dangerous Goods

Acronyms and Abbreviations (continued)

IMS	Incident Management System
IUPAC	International Union of Pure and Applied Chemistry
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
LEPC	Local Emergency Planning Committee
LFA	Lead Federal Agency
LNG	Liquefied Natural Gas
MARPOL	Marine Pollution
MMST	Metropolitan Medical Strike Team Model
MSDS	Material Safety Data Sheet
NACCHO	National Association of County/City Health Officials
NACo	National Association of Counties
NBC	Nuclear, Biological, or Chemical Agents
NCIC	National Crime Information Center
NCP	National Contingency Plan
NDMS	National Disaster Medical System
NFPA	National Fire Protection Association
NIEHS	National Institute of Environmental Health Sciences
NIOSH	National Institute for Occupational Safety and Health
NOAA	(National Oceanographic Atmospheric Administration
NRC	Nuclear Regulatory Commission
NRT	National Response Team
NTP	National Toxicology Program
NTSB	National Transportation Safety Board (
OA	Operating Administration
OAR	Office of Air and Radiation
ODP	Office of Domestic Preparedness
OERR	Office of Emergency and Remedial Response
OPA	Oil Pollution Act

Acronyms and Abbreviations (continued)

OpSec	Operations Security
OSC	On Scene Coordinator
OSH Act	Occupational Safety and Health Act
OSHA	Occupational Safety and Health Administration
p.s.i.a	Pounds Per Square Inch Absolute
p.s.i.g.	Pounds Per Square Inch Gauge
PetroSEP	Special Emphasis Program in the petrochemical industry
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIO	Public Information Officer
PPD	Presidential Policy Directive
PPE	personal protective equipment
PSM	Process Safety Management
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
RRT	Regional Response Team
RSPA	Research and Special Programs Administration
RTK	Right-To-Know
SARA	Superfund Amendments and Reauthorization Act of 1986
SBCCI	Southern Building Code Congress International
SCBA	Self-Contained Breathing Apparatus
SERC	State Emergency Response Commission
SLUDGEM	**S**alivation (excessive oral and nasal secretions), **L**acrimation (tearing of the eyes), **U**rination, **D**efecation, **G**astrointestinal irritation (nausea and stomach cramps), **E**mesis (vomiting), **M**iosis (pinpointing of the pupils
SOG	Standard Operating Guideline
SOP	Standard Operating Procedure

Acronyms and Abbreviations (continued)

TERC	Tribal Emergency Response Commission
THC	Tetrahydrocannabinol
THIRA	Threat and Hazard Identification and Risk Assessment
TI	Technical Instruction
TIA	Terrorism Incident Annex
TPQ	Threshold Planning Quantity
TSCA	Toxic Substance Control Act
UN	United Nations
USCG	United States Coast Guard
USFA	United States Fire Administration
WMD	Weapons Of Mass Destruction