Hazardous Materials Incident Response Curriculum Guidelines

Planning Curriculum Overview

The goal of the *Hazardous Materials Incident Response Planning Curriculum* is to enhance the knowledge, skills, and attitudes of a broad spectrum of state and local training audiences, thus promoting better hazardous materials and terrorist incident planning by jurisdictions and facilities. The *Planning Curriculum Guidelines* are intended to assist public sector training managers and employers to understand the requirements for training public sector personnel involved in planning for hazardous materials and terrorist emergencies. Existing regulatory requirements are defined, and training recommendations are offered to help public sector training mangers improve the quality and effectiveness of hazardous materials and terrorist incident response planning.

What is an Emergency Operations Plan?

According to the Federal Emergency Management Agency (FEMA), an emergency operations plan (EOP) is a document that:

- Assigns responsibility to organizations and individuals for carrying out specific actions at projected times and locations in an emergency.
- Sets forth lines of authority and organizational relationships, and shows how all actions will be coordinated.
- Describes how people and property will be protected in emergencies and disasters.
- Identifies personnel, equipment, facilities, supplies, and other resources available for use during response and recovery operations.
- Identifies steps to address mitigation concerns during response and recovery activities.

The fundamental logic that underlies the development of emergency plans is that these and related decisions must be addressed before an incident occurs. During an emergency, no time exists to resolve such issues or to practice and refine roles and responsibilities. The complex analysis and preparation required to establish an effective emergency operations capability must be completed in advance so that public officials and response personnel can act quickly and decisively to control dangerous situations and protect the public.

Given this rationale, an emergency plan must be more than just a document. To be effective, all personnel who will participate in a hazardous materials or terrorist incident response must know their roles and responsibilities and be competent in the tasks they will perform. This goal is greatly enhanced by participation of tasked organizations and the public in an integrated planning process, including exercising the plan and periodically revising the plan as needed.

The elements covered in a hazardous materials or terrorist incident response plan and the approach to planning will vary, depending on the jurisdiction's or facility's unique needs. However, all plans should contain: (1) an analysis of the emergencies likely to occur; (2) an assessment of available resources and existing capabilities; (3) detailed

response operations strategies and assignments that address notification, command and control, life safety, and other functional requirements; and (4) identification of prevention measures that can mitigate the seriousness of an emergency or prevent it from occurring. The level of detail captured in the plan will also vary, but must be adequate to allow tasked organizations and individuals to develop comprehensive Standard Operating Procedures (SOPs) in their assigned areas.

The Planning Process

There is no single correct way to write a hazardous materials or terrorist incident emergency plan. Each entity must plan according to its own situation, based on such factors as geographic size, types of hazards, populations at risk, resources, and level of preparedness. Jurisdictions and facilities should choose the planning elements and processes most appropriate to their circumstances. However, every community and industry needs to evaluate its preparedness for hazardous materials incidents and plan accordingly.

Various explanations of the planning process can be found in the literature, including those described in the *Comprehensive Preparedness Guide 101: Developing and Maintaining Emergency Operations Plans (FEMA CPG 101); Comprehensive Preparedness Guide 201: Threat and Hazard Identification and Risk Assessment Guide (FEMA CPG 201); Hazardous Materials Emergency Planning Guide (NRT-1); Technical Guidance for Hazards Analysis (EPA/FEMA/DOT); Handbook of Chemical Hazard Analysis Procedures (FEMA/DOT/EPA); and Emergency Management Guide for Business & Industry (FEMA 141)*. These documents and approaches to planning, which are briefly described in the Appendix to the *Planning Guidelines*, incorporate the generic functional requirements of planning, although the steps and procedures may be defined somewhat differently. Jurisdictions and facilities should review these and/or other models to select a process that best meets their unique planning needs and preferences.

Whatever model is adopted for the planning process, a team approach is strongly recommended. A planning team is the best mechanism for incorporating the various types of expertise needed in planning, building consensus among organizations, the business community, and individuals affected by the plan, and promoting professional relationships and understanding among responders. Team members can also help ensure that plans are adequately implemented, evaluated, and maintained after promulgation, and that personnel are given the training and tools they need to achieve competency in their assigned roles and responsibilities.

No specific format is mandated for the results of hazardous materials or terrorist incident response planning. CPG 101 discusses format options for all-hazard and hazard-specific community plans. National Response Team's *Integrated Contingency Plan* Guidance (see the Appendix to the *Planning Guidelines*) describes an approved format for consolidating multiple plans that facilities may have to prepare in compliance with various federal regulations. However, a format is "good" if users understand it, are comfortable with it,

and can extract the information they need. FEMA recommends that planning teams consider the following design characteristics when deciding upon a format: organization, progression, consistency, adaptability, and compatibility.

The approach taken in these *Planning Guidelines* identifies two fundamental planning products, both of which are derived from a common hazards analysis and capability assessment base:

- an emergency operations plan that addresses preparedness for, response to, and short-term recovery from hazardous materials or terrorist incidents; and
- a prevention/mitigation section of the plan that addresses measures designed to eliminate or reduce the effects of potential emergencies (e.g., land use planning, building codes, inspections, equipment testing, release detection, site security, containment, and fail-safe engineering).

Note that community development planning, long-term recovery, and organizational administrative planning (financial management, personnel management, record keeping, labor relations, etc.) are outside the intended scope of the *Planning Guidelines*.

Requirements for Hazardous Materials and Terrorist Incident Response Planning

The responsibility to plan for and, if possible, prevent or mitigate hazardous materials or terrorist emergencies is a fundamental extension of the civic responsibility of state and local organizations to ensure the safety of responders and to protect the public. Congress recognizes this government responsibility for emergency management in the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended. Similarly, the Fixing America's Surface Transportation (FAST) Act streamlined and maximized the impact of PHMSA's hazardous materials grants for emergency responders, hazardous materials professional and local communities. The FAST Act also promotes greater accountability and provides grantees more flexibility in administrating grants that help emergency responders prepare for and respond to incidents involving hazardous materials. Hazardous materials emergency planning is also required under a number of other federal laws and regulations.

EPCRA and SARA Title III

The Emergency Planning and Community Right-to-Know Act (EPCRA) & Title III of Superfund Amendments and Reauthorization Act of 1986 (SARA)

EPCRA and Title III of SARA require the formation of State Emergency Response Commissions (SERCs), Tribal Emergency Response Commissions (TERCs), emergency planning districts, and Local Emergency Planning Committees (LEPCs). Each LEPC must develop, exercise, and maintain an emergency plan that identifies: (1) facilities and transportation routes related to specific chemicals; (2) response procedures of facilities and local emergency and medical personnel; (3) names of community and

facility emergency coordinators; (4) procedures for notifying officials and the public in the event of a hazardous material release; (5) methods for detecting a release and identifying areas and populations at risk; and (6) schedules for exercising the emergency plan.

Occupational Safety and Health Administration (OSHA) 29 CFR § 1910.120

The OSHA regulations (29 CFR § 1910.120) require employers involved in hazardous waste operations to develop and implement an emergency response plan for employees. The elements of this plan must include: (1) Pre-emergency planning; (2) Personnel roles, lines of authority, training, and communication; (3) Emergency recognition and prevention; (4) Safety distances and places of refuge; (5) Site security and control; (6) Evacuation routes and procedures; (7) Decontamination procedures which are not covered by the site safety and health plan; (8) Emergency medical treatment and first aid; (9) Emergency alerting and response procedures; (10) Critique of response and follow-up; and (11) PPE and emergency equipment .Resource Conservation and Recovery Act (RCRA).

Under subtitle C of RCRA, the Environmental Protection Agency (EPA) implements standards for the generation, transportation, treatment, storage, and disposal of hazardous wastes through permits issued by EPA or an authorized state. Permit requirements include a facility contingency plan, with required opportunities for local government and public comment and input into the plan development.

FEMA Emergency Operations Plan Requirements

Planning requirements for jurisdictions receiving FEMA funds are set forth in 44 CFR Part 206, effective May 12, 1986. This regulation requires states and local governments to prepare emergency operations plans (EOPs) that: (1) identify available personnel, equipment, facilities, supplies, and other resources in the jurisdiction; and (2) describe the method or scheme for coordinating actions taken by individuals and government services in the event of emergencies, including those involving hazardous materials.

Coordination with Federal Response

State and local hazardous materials emergency preparedness should include plans for coordination with, and support for, federal response to emergencies. The National Contingency Plan (NCP) is coordinated by the National Response Team under section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The NCP provides for federal support to local responders during hazardous materials transportation and fixed facility incidents. The Federal Response Plan (FRP), coordinated by FEMA, describes resources and support for state and local governments during natural and man-made disasters, including major hazardous materials emergencies.

Other Facility Planning Requirements

Facilities that store, handle, or transport certain types and quantities of hazardous materials may be subject to additional federal contingency planning regulations. In this context, the term "facility" is meant to have a wide connotation, and may include, but is not limited to, any mobile or fixed onshore or offshore building, structure, installation, equipment, pipe, or pipeline. A particular facility may be subject to one or more of the following federal regulations:

- EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements)— 40 CFR §§ 112.7(d) and 112.20 to 112.21
- Bureau of Safety and Environmental Enforcement (BSEE)'s Facility Response Plan Regulation—30 CFR part 254
- PHMSA's Pipeline Response Plan Regulation—49 CFR part 194
- US Coast Guard's Facility Response Plan Regulation—33 CFR part 154, subpart F
- EPA's Risk Management Programs Regulation—40 CFR part 68
- OSHA's Emergency Action Plan Regulation—29 CFR § 1910.38(a)
- OSHA's Process Safety Standard—29 CFR § 1910.119
- EPA's Resource Conservation and Recovery Act Contingency Planning Requirements—40 CFR part 264, subpart D; 40 CFR part 265, subpart D; and 40 CFR § 279.52
- EPA's 40 CFR parts 300 through 313

In addition, states and local jurisdictions may mandate regulatory requirements and procedures that must be considered in hazardous materials and terrorist incident response planning. Local governments and facilities are encouraged to coordinate the development of hazardous materials and terrorist incident response plans with relevant state and local agencies to ensure compliance with any additional regulatory requirements.

The Need to Train

The skill and training of individual responders is only one aspect of safe and effective emergency operations. Terrorist and hazardous materials incidents are complex and involve the coordinated and timely actions of many different persons, often under stressful conditions. The quality of this coordination—based on clearly defined lines of authority, adequate communication systems, availability of resources when needed, etc.—may play a more important role than individual responder training in minimizing injuries and maximizing control of the emergency.

In hazardous materials and terrorist instigated emergencies, the importance of pre-response planning cannot be overstated. Plans provide a mechanism for evaluating operational strategies, defining roles and procedures, communicating organizational assignments, and assessing the adequacy of responder training. The integrated team planning process fosters trust and cooperation among individuals and organizations that

must work together during an incident. Planning also leads to effective mitigation and prevention measures, thus providing communities and facilities with an opportunity to eliminate or reduce the costly and tragic effects of hazardous materials incidents before they occur.

Effective response and prevention planning depends upon the ability of the people who do the work. The quality of hazard analyses and capability assessments, and the effectiveness of response and prevention plans, are directly related to the competency of the personnel assigned responsibility for performing related tasks—public and private sector officials, agency and program managers, planners, technical experts, and many others.

OSHA's regulation 29 CFR § 1910.120(q) requires that all employees be properly trained to perform their roles in response to hazardous materials emergencies. By convention, this is extended to responders to terrorist incidents as well. Employers are not currently required by federal law to train personnel involved in planning. However, federal guidelines strongly recommend that all personnel who participate in the hazardous materials or terrorist incident response planning process at the state and local levels be trained to full competency to perform their roles.

The Scope of the Planning Curriculum

The *Hazardous Materials Incident Response Planning Curriculum* addresses training needed by persons who have a defined role in the development, implementation, evaluation, and maintenance of hazardous materials and terrorist incident emergency plans and standard operating procedures. These critical documents must be prepared by state governments, local communities/jurisdictions, community support services organizations (hospitals, schools, mass care, business/industry, etc.), public sector agencies, and private sector facilities that store, use, or transport significant quantities of hazardous materials. Training requirements for the curriculum span a tremendous variety of functions, skills, and audiences.

Planning Development, Implementation, Evaluation, and Maintenance

In the public sector, functional responsibilities include directing and controlling the planning process, collecting data and managing information, identifying hazards, analyzing related vulnerabilities, estimating risk, assessing capabilities, serving as operational experts in writing plans and SOPs, implementing and integrating the results with other planning efforts, designing and evaluating complex exercises, and updating the plan on a regular basis. Individuals performing this work include community officials, SERC, TERC and LEPC members, agency and program managers, emergency managers, fire service workers, police, emergency medical services personnel, public works officials, community services and volunteer organization representatives, consultants and technical experts, and many others.

Planning for the Transportation and Storage of Hazardous Materials

In the private sector, similar roles and functions must be performed. Facilities that meet certain criteria must also conduct technically sophisticated analyses for chemicals they store, handle, or transport; develop production/process safety management plans and employee safety plans; and comply with employee and community right-to-know requirements and other reporting mandates. Potential training audiences include industry owners and executives, business planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, and others employed by the facility. Local government personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing regulations and standards may also benefit by training in this area.

Training Challenges

This diversity of audiences and roles presents a special challenge for managing training for hazardous materials and terrorist response planning. Access to training audiences is more complex because the interdisciplinary nature of the audience suggests a broad range of possible training delivery mechanisms. Audience members may have limited time available for training in planning because this role is often viewed as an ancillary duty to primary work responsibilities. Finally, hazardous materials and terrorist incident training resources may be limited, necessitating an emphasis on response training, with training in planning and prevention receiving a lower organizational priority.

The Planning Curriculum Model

The curriculum is organized into three training levels based on general skill requirements of the target audience: *Planning Awareness*, *Core Planning Competencies*, and *Mission Specific Planning Competencies*.

Planning Awareness

The Planning Awareness curriculum area provides an introduction to hazardous materials and terrorist incident response planning, with an emphasis on the need for effective plans and the benefits to be derived. Instruction is designed to help individual students identify their roles and responsibilities in the planning process, and motivate them to participate fully and effectively as planning team members. Desired training competencies include an awareness level understanding of general hazardous materials and terrorist incident planning concepts, processes, and legal requirements. No prerequisite knowledge of planning and emergency management concepts is assumed or required, and no skill development is attempted. Training should result in a positive attitudinal change and a general understanding of the planning function.

Core Planning Competencies

The Core Planning Competencies curriculum area provides participants with the knowledge and skills they need to develop a basic integrated hazardous materials and terrorist incident emergency plan for a jurisdiction or facility. The primary training audience is local planning team members. Training objectives cover a broad range of general competencies, including the ability to function effectively in a team environment, assist in or conduct a basic hazards analysis and capability assessment, work with others to analyze options and draft sections of the plan, and participate in plan implementation, evaluation, and maintenance.

The Core Planning Competencies curriculum area addresses basic skills, with an emphasis on the student's ability to interpret and use information provided by various technical specialists in developing the plan. More advanced planning skills are covered in the Mission Specific Planning Competencies curriculum area, discussed below. Audience members are assumed to already possess training competencies covered in Planning Awareness and an expertise in the professional discipline that the student represents on the planning committee. Managerial, administrative, and logistic requirements for organizing the planning process, including staff recruitment and assignments, are not addressed.

Mission Specific Planning Competencies

Recognizing that many skills are needed to support the planning process above those involved in basic plan development, the Mission Specific Planning Competencies curriculum area has been organized to articulate additional, often more advanced, learning competencies. State and local planning needs and training requirements will vary considerably in these specialty areas. Hence, the curriculum supports selective, focused training by jurisdictions and facilities in only those specialty skill areas where training is needed at any given time.

The Planning Curriculum Guidelines

The planning curriculum model presented in this Chapter reflects the general planning philosophies and team approaches incorporated in FEMA and NRT guidance. The training requirements derived from this planning curriculum model support the tasks needed to produce comprehensive OSHA and SARA Title III plans and facility plans. As noted previously, the training requirements address a variety of audiences and needs. While these *Planning Guidelines* bring together the planning guidance of emergency management agencies and the planning requirements of regulatory agencies, the challenge for state, tribal, and local training managers will be to match the unique roles and responsibilities of personnel in their jurisdictions with the three curriculum areas (or competency levels) used in this model. Alternatively, training managers may tailor the model to meet their specific needs.

The Chapters of the *Planning Guidelines* identify training requirements for each major curriculum area: *Planning Awareness, Core Planning Competencies*, and *Mission Specific Planning Competencies*. These requirements are defined primarily in the form of objectives, which describe capabilities needed by audience members to successfully perform the basic competencies stated in the terminal objectives. An overview of the target audiences and recommended training methodologies is presented below. More in-depth descriptions of the curriculum area, target audiences, subject matter content, and recommended training methodologies are offered at the beginning of each chapter.

Planning Awareness

Training Audience

The primary training audience for *Planning Awareness* includes all potential participants in the hazardous materials and terrorist incident planning process from jurisdictions, government and response agencies, community services organizations, private sector facilities and transporters, and other businesses and industries. Specifically included are elected and appointed officials, chief executive officers (CEOs), program managers, and others who are able to influence jurisdictional and organizational planning priorities and resources. In addition, training is encouraged for the broad spectrum of persons who have a "stake" in planning, i.e., they may be impacted by the results of planning, although they have no defined role in the actual development of emergency plans. Thus, audience members might include:

- Jurisdiction and facility planning team members
- LEPC, TERC, and SERC members
- Local, tribal, and state government officials, including elected and appointed
- Facility owners and managers
- Representatives of government and response agencies, including SOP writers
- Representatives of community support services and volunteer organizations
- Emergency responders and mitigation/prevention personnel
- Citizens in the impacted planning jurisdiction
- Special interest and advocacy groups
- Emergency program managers

Methodology Recommendations

The typical training delivery format for *Planning Awareness* is a brief (one to four hours) presentation or seminar led by an experienced and dynamic facilitator. Whenever possible, the audience should include representatives from a broad range of organizations and disciplines, thereby promoting a heightened understanding of the diverse interests and requirements associated with hazardous materials and terrorist incident response planning. Because training should motivate and encourage attitudinal change, the use of presentation graphics and instructional media (slides, videotapes, etc.) is particularly appropriate. Other considerations include:

- Training must be tailored to audience needs, recognizing that some students may have no understanding of emergency management or the challenges associated with interdepartmental planning and coordination.
- When possible, training should permit group interactions and foster initial team building.
- Training experiences should be practical and constructive to promote positive attitudinal change. The discussion of hazardous materials and terrorist threats, which is important to focus attention and clarify program need, should emphasize positive solutions through community and industrial planning and cooperation.
- Course materials should include local examples and issues to help generate interest and participation in local planning processes.
- Recruitment of students may be an issue due to lack of preexisting interest in the subject (or local economic hardship prevails). "Teaser" programs and strategies to peak community interest and enrollment may be appropriate.

Core Planning Competencies

Training Audience

The training audience for the *Core Planning Competencies* curriculum area includes planning team members who have a defined responsibility in researching, preparing, implementing, and maintaining hazardous materials and terrorist incident response plans for jurisdictions or facilities. These persons generally represent their organization or functional specialty in an integrated planning process. Audience categories can be summarized as follows:

- For communities, training audiences may include local government emergency planners, SERC/TERC/LEPC and Area Committee members, hazardous materials officers and team leaders, emergency program managers, public sector agency representatives, community support services and volunteer organization representatives, and various technical specialists.
- For private sector facilities, audience members may include industry owners and executives, general planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, and others employed by the facility.
- Personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing community regulations and standards may also benefit by training.

Methodology Recommendations

It is recognized that the planning needs of different jurisdictions and facilities, and the resulting training needs of planning team members, can vary greatly, depending on such factors as geographic size, demographics, hazards, local resources, and political preferences. However, the *Core Planning Competencies* curriculum area is intended to address the generic training requirements of all hazardous materials and terrorist

incident response planners. Training managers, course developers, and instructors may need to tailor materials to meet the unique needs and interests of different audiences, incorporating elements covered in *Planning Specialties*, as appropriate.

Training can typically be accomplished in two to four days of classroom instruction led by an experienced facilitator. Breaking training into modules (e.g., Hazards Analysis) that are delivered at different times is also possible, and this approach may be beneficial if timed to coincide with planning team assignments. However, team building is very important in the planning process, so continuity of student groupings throughout training is recommended. Other training considerations include the following:

- Training should focus on the actual development of local plans, with the product and participation in the group planning process used to demonstrate student mastery of the objectives.
- Audience should be heterogeneous, reflecting the diverse community members and professional disciplines involved in the planning process. It is highly recommended that team members who will work together in subsequent planning efforts be trained together as a team.
- Course methodology should emphasize group interactions, team building, and resolution of interpersonal conflicts, as well as the development of the plan product itself.
- Course materials should be multi-tracked in terms of type of plan (OSHA, SARA, etc.) to facilitate tailoring the instruction to the needs of the audience.
- Instruction should include practical strategies for merging local plan requirements and needs (i.e., merging several plan requirements into one development effort) to foster more efficient planning efforts.
- Instruction should emphasize the need for ongoing planning commitments by the team and the organizations they represent.
- Instruction should emphasize the need for ongoing evaluation at each step in the planning process.
- Instructors should emphasize that steps in the planning process, although taught sequentially, may actually be performed simultaneously.

Mission Specific Planning Competencies

The next eight chapters in the Planning Guidelines address training objectives that should be achieved by public sector employees performing various hazardous materials and terrorist incident response planning functions. These training objectives are organized by specialty area, and are subsumed under the *Mission Specific Planning Competencies* curriculum area.

- Planning Specialties
- Commodity Flow Study
- Hazard Analysis
- Capability Assessment

- Planning for Protective Actions
- Plan Implementation and Maintenance
- Facility Planning
- Planning for Public Education

The list of mission specific specialty areas included in the curriculum is intended to reflect the prevailing needs of state and local training organizations. It is anticipated that more mission specific specialty areas will be defined over time, and some may be eliminated or modified as needs change. Some candidates for future topic areas include Using Geographic Information Systems in Planning, Organizing the Planning Process, Planning Information Management, Exercising the Plan, SOP Writing, Illicit Use of Hazardous Materials, Liability Issues in Hazardous Materials, and Marketing the Plan.

Training Audience

The training audience for the *Mission Specific Planning Competencies* curriculum area includes jurisdiction and/or facility hazardous materials planning team members that have been assigned responsibilities requiring advanced level knowledge and skills, i.e., exceeding those skills needed to develop a basic plan as defined in *Planning Essentials*. Included are representatives of local government and response agencies, community services organizations, private sector facilities and transporters, and other businesses and industries. Because audience members will vary somewhat according to the topic, they are defined in more detail for each specialty area. However, a generic listing might include:

- Jurisdiction and facility planning team members
- LEPC, TERC, and SERC members
- Facility owners and managers
- Representatives of government and response agencies
- Representatives of community support services and volunteer organizations
- Mitigation/prevention personnel
- Consultants and technical experts
- Emergency program managers

Methodology Recommendations

The typical training delivery format for *Mission Specific Planning Competency* training is a one to two day course led by an experienced instructor. However, more or less time may be appropriate, depending on the subject area, degree of complexity, and related planning requirements. Training managers may also wish to combine Planning Specialties modules for audiences that need training in more than one area, or add one or more modules to Planning Essentials. Other training considerations include the following:

- Audience members are assumed to already possess basic competencies in hazardous materials plan development. Otherwise, experience and expertise among audience members may vary significantly.

- Training should be tailored to audience needs, focusing on the specific jurisdiction's or facility's planning requirements and individual assignments in the planning process.
- Course materials should include local examples, and activities should be based on local issues and data to the extent possible.
- Where local teams are conducting complex studies, members should be trained concurrently, and training should permit group interactions and foster team building.

More information on training scope, audiences, and appropriate methodologies is presented on subsequent pages for each specialty topic area.

Hazardous Materials Incident Response Curriculum Guidelines

Planning Awareness

Introduction

The Planning Awareness curriculum area provides an introduction to hazardous materials incident response planning, with an emphasis on the need for planning and the benefits to be derived. Instruction should help individual students identify their roles and responsibilities in the planning process, and motivate them to participate fully and effectively as planning team members. Desired training competencies include an awareness level understanding of general hazardous materials and terrorist incident planning concepts, processes, and legal requirements. No previous knowledge is assumed, and no skill development should be attempted. Training should result in a positive attitude change and the achievement of a general understanding of the planning function.

Training Audience

The primary training audience for Planning Awareness includes all potential participants in the hazardous materials incident planning process from jurisdictions, government and response agencies, community services organizations, private sector facilities and transporters, and other businesses and industries. Specifically included are elected and appointed officials, CEOs, program managers, and others who are able to influence jurisdictional and organizational planning priorities and resources. In addition, training is encouraged for the broad spectrum of persons who have a "stake" in planning, i.e., they may be impacted by the results of planning, although they have no defined role in the actual development of emergency plans. Thus, audience members might include:

- Jurisdiction and facility planning team members
- LEPC, TERC, and SERC members
- Local, tribal, and state government officials, including elected and appointed
- Facility owners and managers
- Representatives of government and response agencies, including SOP writers
- Representatives of community support services and volunteer organizations
- Emergency responders and mitigation/prevention personnel
- Citizens in the impacted planning jurisdiction
- Special interest and advocacy groups
- Emergency program managers

Methodology Recommendations

The typical training delivery format for Planning Awareness is a brief (one to four hours) presentation or seminar led by an experienced and dynamic facilitator. Whenever possible, the audience should include representatives from a broad range of organizations and disciplines, thereby promoting a heightened understanding of the diverse interests and requirements associated with hazardous materials and terrorist incident response planning. Because training should motivate and encourage attitudinal

change, the use of presentation graphics and instructional media (slides, videotapes, etc.) is particularly appropriate. Other considerations include:

- Training must be tailored to audience needs, recognizing that some students may have no understanding of emergency management or the challenges associated with interdepartmental planning and coordination.
- When possible, training should permit group interactions and foster initial team building.
- Training experiences should be practical and constructive to promote positive attitudinal change. The discussion of hazardous materials and terrorist threats, which is important to focus attention and clarify program need, should emphasize positive solutions through community and industrial planning and cooperation.
- Course materials should include local examples and issues to help generate interest and participation in local planning processes.
- Recruitment of students may be an issue due to lack of preexisting interest in the subject. “Teaser” programs and strategies to peak community interest and enrollment may be appropriate.

Recommended Training Objectives

The following instructional objectives describe student competencies recommended for orienting planning team members and others to the subject of hazardous materials and terrorist incident response planning. The legislative and regulatory basis for this training can be found primarily in the requirements specified in OSHA 1910.120 for development of employers' emergency response plan, SARA Title III for development of planning jurisdiction emergency response plans, and various federal agency regulations for development of facility and transporter emergency response plans. Sources for the material include the planning guidance in FEMA CPG 101, NRT-1, and other reference documents, the most important of which are described in the Appendix to these Planning Guidelines. The objectives are designed to be comprehensive, i.e., to address the training requirements of all identified audience members; thus, training developers and instructors will need to tailor these objectives to meet local audience interests, needs, and planning processes.

Key Objectives

PLN AW - 1 Explain the purpose, benefits of, and participants in hazardous materials emergency planning.

PLN AW - 2 Identify legal requirements impacting the planning process.

PLN AW - 3 Identify the scope and elements of a hazardous materials plan.

PLN AW - 4 Identify the major steps to be taken, participants involved, and resources needed in the planning process.

PLN AW - 5 Identify strategies for promoting hazardous materials planning.

PLN AW - 1

Given a description of potential hazardous materials and terrorist incident risks, explain the purpose and benefits of integrated hazardous materials emergency planning, and describe typical roles and participants in the emergency management system.

PLN AW - 1.1

Describe the nature of the hazardous materials and terrorist incident threat and associated risks for the government, industry, and community, including the relationship between natural and technological hazards.

PLN AW - 1.2

Describe the purpose and benefits of a comprehensive and integrated approach to hazardous materials and terrorist incident response planning, including the relationships among plans, SOPs, and exercises.

PLN AW - 1.3

Describe the roles and general responsibilities of federal, state, and local government agencies and private sector organizations in integrated hazardous materials and terrorist incident preparedness, response, recovery, and mitigation/prevention.

PLN AW - 2

Given a jurisdiction or facility with the need to develop an integrated hazardous materials plan, identify legal requirements impacting the planning process and product.

PLN AW - 2.1

Identify hazardous materials planning requirements for state and local jurisdictions contained in the following authorities:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended
- Title III of the Superfund Amendments Reauthorization Act (SARA)
- Hazardous Materials Emergency Planning Guide (NRT-1)
- OSHA 29 CFR 1910.120 and EPA 40 CFR

PLN AW - 2.2

List legislation and regulations that affect facility planning requirements, including:

- EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements)— 40 CFR part 112.7(d), 112r, and 112.20 to 112.21
- BSEE's Facility Response Plan Regulation—30 CFR part 254
- PHMSA's Pipeline Response Plan Regulation—49 CFR part 194
- USCG's Facility Response Plan Regulation—33 CFR part 154, subpart F
- EPA's Risk Management Programs Regulation—40 CFR part 68
- OSHA's Emergency Action Plan Regulation—29 CFR 1910.38(a)
- OSHA's Process Safety Standard—29 CFR 1910.119
- OSHA's HAZWOPER Regulation—29 CFR 1910.120
- EPA's Resource Conservation and Recovery Act Contingency Planning Requirements—40 CFR part 264, subpart D, 40 CFR part 265, subpart D, and 40 CFR part 279.52

EPA's 40 CFR 300 through 313PLN AW - 3

Given the assignment to conduct hazardous materials and terrorist emergency planning, identify the scope and elements of an integrated hazardous materials and terrorist incident emergency plan.

PLN AW - 3.1

Define the scope (in terms of types of emergencies and functions to be addressed) of an integrated hazardous materials and terrorist emergency plan for a jurisdiction or facility.

PLN AW - 3.2

Identify the elements of an integrated hazardous materials and terrorist emergency plan that are necessary to meet local, state, and federal requirements and guidelines.

PLN AW - 4

Given the assignment to conduct hazardous materials and terrorist incident emergency planning, identify and describe the major steps to be taken, the participants to be involved, and the resources that will be needed in the planning process.

Note: Various explanations of the planning process can be found in the literature, including those described in the Guide for All-Hazard Emergency Operations Planning (FEMA CPG 101), Hazardous Materials Emergency Planning Guide (NRT-1), Technical Guidance for Hazards Analysis (EPA/FEMA/DOT), Handbook of Chemical Hazard Analysis Procedures (FEMA/DOT/EPA), and Emergency Management Guide for Business & Industry (FEMA 141), and NRT's Integrated Contingency Plan Guidance. These approaches to planning, which are briefly described in Appendix B, incorporate the generic functional requirements of planning, although the steps and procedures may be defined somewhat differently. Jurisdictions and facilities should select and/or modify these models to best meet their unique planning needs and preferences.

PLN AW - 4.1

Identify and describe the major steps in the planning process to be used.

PLN AW - 4.2

Identify participants and other resources needed for the planning process.

PLN AW - 5

Given an assignment to participate in or support integrated hazardous materials and terrorist incident response planning, identify strategies for promoting planning.

PLN AW - 5.1

Describe the participant's role, responsibilities, and work requirements in the integrated hazardous materials and terrorist incident response planning process.

PLN AW - 5.2

Identify related information and training needs, available resources, contacts, and possible obstacles or constraints.

PLN AW - 5.3

Identify criteria for selecting strategies for promoting planning.

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Hazardous Materials Incident Response Curriculum Guidelines

Core Planning Competencies

Introduction

Training addressing Core Planning Competencies should provide participants with the knowledge and skills they need to develop a basic integrated hazardous materials and terrorist incident emergency plan for a jurisdiction or facility. The primary training audiences are local planning team members. Training objectives cover a broad range of generic competencies, including the ability to function effectively in a team environment, to assist in or conduct a basic hazards analysis and capability assessment, to work with others to analyze options and draft sections of the plan, and to participate in plan implementation, evaluation, and maintenance.

The Core Planning Competencies cover basic skills, with an emphasis on the ability to interpret and use information provided by various technical specialists in developing the plan. More advanced planning skills are addressed in Mission Specific Planning Competency areas. Audience members are assumed to already possess the knowledge and skills covered in Planning Awareness and an expertise in the professional discipline that the student represents on the planning committee. It is further assumed that managerial, administrative, and logistic requirements for organizing the planning process, including staff recruitment and assignments, have already been accomplished.

Training Audience

The training audience for Core Planning Competencies includes planning team members who have a defined responsibility in researching, preparing, implementing, and maintaining hazardous materials and terrorist incident response plans for jurisdictions or facilities. These persons generally represent their organization or functional specialty in an integrated planning process. Audience categories can be summarized as follows:

- For communities, training audiences may include local government emergency planners, SERC/TERC/LEPC and Area Committee members, hazardous materials officers and team leaders, emergency program managers, public sector agency representatives, community support services and volunteer organization representatives, and various technical specialists.
- For private sector facilities, audience members may include industry owners and executives, general planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, and others employed by the facility.
- Personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing community regulations and standards may also benefit by training.

Methodology Recommendations

It is recognized that the planning needs of different jurisdictions and facilities, and the resulting training needs of planning team members, can vary greatly, depending on such

factors as geographic size, demographics, hazards, local resources, and political preferences. However, the Core Planning Competencies are intended to address the generic training requirements of all hazardous materials and terrorist incident response planners. Training managers, course developers, and instructors may need to tailor materials to meet the unique needs and interests of different audiences, incorporating elements covered in Planning Specialties, as appropriate.

Training can typically be accomplished in two to four days of classroom instruction led by an experienced facilitator. Breaking training into modules (e.g., Hazards Analysis) that are delivered at different times is also possible, and this approach may be beneficial if timed to coincide with planning team assignments. However, team building is very important in the planning process, so continuity of student groupings throughout training is recommended. Other training considerations include the following:

- Training should focus on the actual development of local plans, with the product and participation in the group planning process used to demonstrate student mastery of the objectives.
- Audience should be heterogeneous, reflecting the diverse community members and professional disciplines involved in the planning process. It is highly recommended that team members who will work together in subsequent planning efforts be trained together as a team.
- Course methodology should emphasize group interactions, team building, and resolution of interpersonal conflicts, as well as the development of the plan product itself.
- Course materials should be multi-tracked in terms of type of plan (OSHA, SARA, etc.) to facilitate tailoring the instruction to the needs of the audience.
- Instruction should include practical strategies for merging local plan requirements and needs (i.e., merging several plan requirements into one development effort) to foster more efficient planning efforts.
- Instruction should emphasize the need for ongoing planning commitments by the team and the organizations they represent.
- Instruction should emphasize the need for ongoing evaluation at each step in the planning process.
- Instructors should emphasize that steps in the planning process, although taught sequentially, may actually be performed simultaneously.
- Conduct appropriate exercise type (seminar, workshop, or table-top) to help with development and/or validation of planning content.

Recommended Training Objectives

The following instructional objectives describe competencies recommended for training planning team members and others in the core competencies of hazardous materials and terrorist incident response planning. The legislative and regulatory basis for this training can be found primarily in the requirements specified in OSHA 1910.120 for development of employers' emergency response plan; SARA Title III for development of planning jurisdiction emergency response plans; and various federal agency regulations for the development of facility and transporter emergency response plans. The objectives incorporate generic concepts and processes derived from various sources in the planning literature. Several of the most important reference documents, and more specific models for planning, are described in the Appendices. The objectives are intended to be comprehensive, i.e., to address the training requirements of all identified audience members; thus, training developers and instructors will need to tailor these objectives to meet local audience interests, needs, and planning processes.

Key Objectives

PLCORE - 1 Identify an appropriate planning strategy and describe team member responsibilities.

PLCORE - 2 Describe steps involved to identify, acquire and summarize relevant background information.

PLCORE - 3 Identify and describe the purpose, benefits, major steps, and participants' roles in Hazards Analysis and Capability Assessment.

PLCORE - 4 Describe the steps involved to identify, collect, review and interpret the Hazards Analysis and Capability Assessment.

PLCORE - 5 Identify the issues and solutions to be addressed in the plan and identify needed assignments for developing the plan.

PLCORE - 6 Describe the steps in developing or updating a Hazardous Materials and Terrorist Incident Response Plan.

PLCORE - 7 Describe the steps in developing or updating the prevention/mitigation section of the plan.

PLCORE - 8 Describe the steps in the plan review and appraisal process.

PLCORE - 9 Describe an appropriate strategy and identify methods for implementing the plan.

PLCORE - 10 Describe an appropriate strategy for evaluating and maintaining the plan.

PLCORE - 1

Given an assignment as a planning team member and an overview of the planning process to be used, identify an appropriate planning strategy and describe team member responsibilities in the process.

PLCORE - 1.1

Describe the benefits of a team approach to planning and identify skills necessary to participate in the team planning process.

PLCORE - 1.2

Identify team members with related roles, coordination requirements, available resources, and administrative support systems.

PLCORE - 1.3

Describe roles of participants in the team planning process, to include organizational and/or functional areas of responsibility.

PLCORE - 1.4

Demonstrate an understanding of the planning process mission statement, goals, and objectives.

PLCORE - 1.5

Describe the expected results of the planning process, to include the plan format and time lines.

PLCORE - 2

Given a review of pertinent information sources and data collection methods, describe the steps involved and demonstrate the ability to identify, acquire and summarize background information related to individual organizational and/or functional area(s) of responsibility that will impact the team planning process.

PLCORE - 2.1

Demonstrate the ability to identify, gather, and review copies of policies, plans, and authorities (e.g., community Emergency Operations Plans, mitigation/prevention plans, response agency SOPs, facility plans, codes and ordinances, etc.).

PLCORE - 2.2

Demonstrate the ability to review critiques of actual incidents, exercises, and drills and identify issues to be addressed in the plan.

PLCORE - 2.3

Demonstrate the ability to review changes and trends impacting the jurisdiction, organization, or facility and identify issues to be addressed in the plan.

PLCORE - 2.4

Demonstrate the ability to interview managers, public officials, technical specialists, and practitioners in organizations affected by the plan and identify issues to be addressed in the plan.

PLCORE - 2.5

Identify, aggregate, and summarize related planning issues, priorities, concerns, and challenges.

PLCORE - 3

Given an assignment as a planning team member and an overview of the planning process to be used, identify and describe the purpose, benefits, major steps, and participant's role in Hazards Analysis & Capability Assessment.

PLCORE - 3.1

Explain the purpose, benefits, and major steps in conducting a Hazards Analysis.

PLCORE - 3.2

Explain the purpose, benefits, and major steps in conducting a Capability Assessment.

PLCORE - 3.3

Identify responsibilities in the Hazards Analysis & Capability Assessment processes, as appropriate.

PLCORE - 3.4

Describe the methods and expected results of the Hazards Analysis & Capability Assessment processes, including roles of various planning team members and technical specialists.

PLCORE - 4

Given an assignment as a planning team member and an overview of the planning process to be used, describe the steps involved and demonstrate the ability to identify, collect, review and interpret the Hazards Analysis & Capability Assessment data.

PLCORE - 4.1

Demonstrate the ability to collect or assist in collecting the data, as required.

PLCORE - 4.2

Demonstrate the ability to review and interpret the data.

PLCORE - 4.3

Demonstrate the ability to identify, map, and prioritize hazards, risk areas, and vulnerable zones, and identify capability shortfalls and excesses (gap analysis).

PLCORE - 5

Given an assignment as a planning team member and the results of research and input from other planning team members, identify the issues and solutions to be addressed in the plan and identify needed assignments for developing the plan.

PLCORE - 5.1

Describe issues and solutions to be addressed in the plan by examining existing plans, Hazards Analysis results, Capability Assessment results and other pertinent information.

PLCORE - 5.2

Identify plan development tasks to be assigned to planning team and other organizational representatives.

PLCORE - 6

Given identified issues and solutions to be addressed in the plan and assignments to planning team members, describe the steps involved and demonstrate the ability to participate in developing or updating the Integrated Hazardous Materials and Terrorist Incident Response Emergency Plan, to address preparedness, response and short term recovery.

PLCORE - 6.1

Identify the planning elements necessary to comply with regulatory requirements, standards, and guidelines.

PLCORE - 6.2

If developing or updating a facility or organization plan, describe format guidelines specified in the NRT's Integrated Contingency Plan guidance.

PLCORE - 6.3

Demonstrate the ability to develop or update the plan to meet the required regulatory elements.

PLCORE - 7

Given identified issues and solutions to be addressed in the plan and assignments to planning team members, describe the steps involved and demonstrate the ability to participate in developing or updating a comprehensive prevention/mitigation section in the plan.

PLCORE - 7.1

Identify prevention/mitigation strategies and techniques to address the identified issues and solutions.

PLCORE - 7.2

Demonstrate the ability to write the plan to meet all identified prevention/mitigation planning needs.

PLCORE - 8

Given a completed draft hazardous materials plan, describe the steps involved and demonstrate the ability to participate in the plan review and appraisal process.

PLCORE - 8.1

Identify the purpose and benefits of reviewing the plan.

PLCORE - 8.2

Demonstrate the ability to conduct an internal draft plan review to assess adequacy and completeness.

PLCORE - 8.3

Demonstrate the ability to facilitate an external review of the draft plan, which may include peer review, management review, community input, and state/federal review.

PLCORE - 8.4

Demonstrate the ability to make necessary revisions, and promote formal plan promulgation.

PLCORE - 9

Given a completed hazardous materials and terrorist incident response plan, describe an appropriate strategy and identify methods for implementing the plan.

PLCORE - 9.1

Identify the purpose and benefits of conducting plan implementation.

PLCORE - 9.2

Identify roles and responsibilities for plan implementation, to include available resources, administrative systems, and time lines.

PLCORE - 9.3

Describe the strategy and methods for plan implementation, to include:

- Disseminating copies of the plan
- Briefing and orienting users of the plan
- Coordinating the plan with other planning efforts
- Coordinating the plan with other training efforts.

PLCORE - 10

Given a completed hazardous materials plan, describe an appropriate strategy and identify methods for evaluating and maintaining the plan.

PLCORE - 10.1

Identify the purpose and benefits of conducting plan evaluation and maintenance.

PLCORE - 10.2

Identify roles and responsibilities for plan evaluation and maintenance.

PLCORE - 10.3

Describe the strategy and methods for plan evaluation and maintenance, to include:

- Monitoring changes, trends, and actual events impacting the plan
- Developing, conducting, and evaluating exercises and drills
- Periodically updating and revising the plan.

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Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Commodity Flow Study

Introduction

Most communities, whether large or small, are origins, destinations, or through-routes for hazardous materials transportation. In order to plan and prepare for possible hazardous materials and terrorist transportation incidents, planners need basic data on the types and quantities of chemicals transported through the jurisdiction. The process of acquiring and analyzing this information, referred to here as a commodity flow study, is one of the first steps in preparing a community's integrated hazardous materials emergency plan. Results can be used to analyze current traffic patterns, focus planning efforts on existing needs, and reduce the potential for incidents to occur.

This training specialty area builds on *Planning Awareness* competencies to provide participants with the knowledge and skills they need to prepare a simple commodity flow study. Content areas covered by training should include the purpose and benefits of conducting commodity flow studies, an overview of appropriate data collection methods, generic steps in the process, related statistical concepts, and sources of additional assistance and information. Where appropriate, more specific models and procedures followed by the jurisdiction can be introduced. Applications and limitations of the study results in the planning process should also be reviewed.

Training Audience

Potential training audiences include all participants in the planning process that have been assigned responsibility for conducting a commodity flow study that exceeds the competencies covered under Planning Essentials. Possible audience members include:

- Community planning team members
- Facility planners and managers
- Response agency representatives
- Prevention personnel, transport inspectors
- Technical experts and consultants
- Local roadway authorities

Prerequisites or Presumed Prior Student Knowledge/Skills

Students are assumed to possess the knowledge and skills addressed in the Core Planning Competencies. Consideration should be given to students that have a defined responsibility for conducting a commodity flow study for a jurisdiction as a regular part of their job.

Typical Program Format

The typical format is an instructor-led program, approximately one to two days in length. Longer programs may be appropriate where more complex commodity flow studies are planned or when actual field surveys are included as training activities.

Methodology and Training Delivery Recommendations

Training should provide students with knowledge of the steps and components of a generic commodity flow study, and skill in performing various data collection methods. Trainees must understand the significance and application of commodity flow study information, and develop the ability to recognize and develop useful and meaningful data on which to base subsequent emergency operations and prevention programmatic and organizational decisions.

Much of the subject matter in this specialty area can be introduced through self-study, but training should include formal classroom instruction with time spent in individual and small-group work. Some commodity flow study training programs include as much as three days of classroom instruction. Activities should focus on skill development in identifying, collecting, and interpreting various types of commodity flow data, and in using this information in the planning process. Limited field surveys, reviews of shipping papers, role plays of driver interviews, etc. are particularly appropriate for promoting learning. Realistic local situations and scenarios should be used as the basis for activities, when possible. Student achievement should be measured as much as possible by direct instructor observation, because students may often need hands on guidance in dealing with the interpretative nature of some of the material being taught

Integration of the information learned by trainees can be demonstrated in a post-class activity involving the development of a limited commodity flow study based on data from the jurisdiction or scenarios provided by the instructor. For this reason, members of jurisdictional planning teams should be trained together, if possible, using the planned study as the basis for activities. Content testing is appropriate for demonstrating knowledge of the steps involved in a commodity flow study and methods of data collection.

Recommended Training Objectives

Key Objectives

CFLOW - 1 Describe the purpose and benefits of conducting a commodity flow study.

CFLOW - 2 Identify the major steps involved in conducting a commodity flow study.

CFLOW - 3 Identify the specific purpose of a commodity flow study.

CFLOW - 4 Describe how to identify and review existing baseline information appropriate to the study.

CFLOW - 5 Explain how to design a field investigation appropriate to the study.

CFLOW - 6 Explain how to implement common data collection methods.

CFLOW - 7 Describe how to apply appropriate sampling techniques to the collection and interpretation of the data.

CFLOW - 8 Identify how to apply the results of a commodity flow study to planning.

CFLOW - 1

Given a jurisdiction with the need to develop an integrated hazardous materials emergency plan, describe the purpose and benefits of conducting a commodity flow study, including appropriate applications of the results in planning.

CFLOW - 1.1

Describe the purpose and benefits of conducting a commodity flow study in hazardous materials planning.

CFLOW - 1.2

Describe appropriate applications of the results of commodity flow studies in hazardous materials planning.

CFLOW - 2

Given an assignment to conduct a commodity flow study for a jurisdiction, identify major steps in the process, such as the following:

- Identify the specific purpose(s) of the study.
- Review baseline information appropriate to the study.
- Design the study.
- Conduct field surveys.
- Analyze the results.
- Apply the results to the study purpose and objectives.

CFLOW - 3

Given an assignment to conduct a commodity flow study for a jurisdiction, identify the specific purpose(s) of the study.

CFLOW - 3.1

Assess the emergency management needs and other possible applications and uses for hazardous materials transportation data in the jurisdiction.

CFLOW - 3.2

Identify the specific types of hazardous materials transportation data needed for the study.

CFLOW - 4

Given the specific purpose(s) of a commodity flow study for a jurisdiction, describe how to identify and review existing baseline information appropriate to the study.

CFLOW - 4.1

Describe common sources of existing information that can be used to identify roads available to hazardous materials transportation.

CFLOW - 4.2

Describe common sources of existing information on vehicle traffic patterns, chemical flows, and accident histories in the jurisdiction.

CFLOW - 5

Given the specific purpose(s) and baseline data of a commodity flow study for a jurisdiction, explain how to design a field investigation appropriate to the study.

CFLOW - 5.1

Compare baseline information with project goals to determine whether a field investigation should be undertaken.

CFLOW - 5.2

Identify options and considerations for determining survey locations.

CFLOW - 5.3

Identify options and considerations for determining survey times and repetitions.

CFLOW - 5.4

Identify the personnel and other resource requirements associated with selected field survey methods.

CFLOW - 6

Given an area to be surveyed and the commodity flow study design for a jurisdiction, describe the steps involved and demonstrate the ability to implement common data collection methods.

CFLOW - 6.1

Describe common methods and demonstrate the appropriate use of placard surveys.

CFLOW - 6.2

Describe common methods and demonstrate the appropriate use of shipping papers reviews.

CFLOW - 6.3

Describe common methods and demonstrate the appropriate use of driver interviews.

CFLOW - 6.4

Describe common methods and demonstrate the appropriate use of facility surveys.

CFLOW - 6.5

Describe the advantages and disadvantages of various data recording procedures that can be used in field surveys.

CFLOW - 7

Given hazardous materials transportation data for a jurisdiction, describe the steps involved and demonstrate the ability to apply appropriate sampling techniques to the collection and interpretation of the data.

CFLOW - 7.1

Describe key statistical concepts (e.g., Poisson distribution, expected and observed value, confidence intervals) relevant to traffic flow analysis.

CFLOW - 7.2

Make appropriate conclusions and inferences based on sample characteristics and collected data.

CFLOW - 8

Given hazardous materials transportation data and analyses for a jurisdiction, describe the steps involved and demonstrate the ability to apply the results in planning.

CFLOW - 8.1

Map or otherwise display and report the results of the commodity flow study to obtain a clear picture of hazardous materials transportation in the jurisdiction.

CFLOW - 8.2

Compare the study results and project goals to identify action items and a schedule for implementing them through the jurisdiction's plan development and implementation process.

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Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Hazard Analysis and Threat Assessment

Introduction

A hazards analysis and threat assessment includes (1) identifying hazards associated with the storage, handling, processing and transportation of hazardous materials; (2) identifying potential targets of terrorism within the jurisdictional area; (3) conducting a vulnerability analysis to identify people, property, and environments susceptible to damage should a hazardous materials release or related terrorist incident occur; and (4) conducting a risk analysis to determine the probability of various types of emergencies and estimates of resulting damage.

Training should provide the knowledge and skills necessary to conduct a comprehensive hazards analysis/threat assessment for a jurisdiction or facility. Skill development should include the ability to assess the jurisdiction's or facility's hazards analysis/threat assessment needs, determine appropriate methods, collect and interpret data, and report the results. Specifically included is the use of tables and other tools for determining the level of concern, establishing hazard and vulnerability zones, and identifying related priorities. More sophisticated and technical approaches to hazards analysis may also be covered, if appropriate, or references provided for additional training and assistance.

Training Audience

Potential training audiences are all participants in the planning process that have been assigned responsibility for conducting a hazard analysis/threat assessment that exceeds the competencies covered under Planning Essentials. Possible audience members include:

- Community planning team members
- Facility planners and managers
- Response agency representatives
- Federal counter-terrorism planning team members
- Prevention personnel
- Technical experts and consultants

Prerequisites or Presumed Prior Student Knowledge/Skills

Students are assumed to possess the knowledge and skills addressed in the Core Planning Competencies. Consideration should be given to students that have a defined responsibility for conducting higher level hazards analyses for a jurisdiction or facility as a regular part of their job.

Typical Program Format

The typical format is an instructor-led program, approximately one to two days in length. Longer programs may be appropriate where more complex studies are planned or when

actual field surveys are included as training activities. Training managers may wish to combine this instruction with a module on capability assessment for audiences that perform both tasks.

Methodology and Training Delivery Recommendations

The successful accomplishment of training objectives should result in enhanced student proficiency in applying the principles of hazards analysis and threat assessment to a specific jurisdiction's or facility's planning needs and processes. Training should focus on developing knowledge of the steps and components of hazard analysis and threat assessment, and on developing skill in performing hazard identification, potential target identification, vulnerability analysis, and risk analysis. Trainees must understand the significance and application of hazards analysis and threat assessment information, and develop the ability to recognize and develop useful and meaningful data on which to base subsequent emergency operations planning and prevention programmatic and organizational decisions.

Much of the content for analyzing hazards and assessing threats can be introduced through self-study, but training should include formal classroom instruction with significant time spent in individual and small group work. Activities should focus on skill development in extracting hazard identification and vulnerability information from available data sources, using threat alert histories in identifying possible terrorist targets, determining vulnerable zones and potential terrorist targets from maps and hazard data, and performing the analyses leading to accurate risk determination. Content testing is appropriate for demonstrating knowledge of the steps involved in hazards analysis and threat assessment, listing types of hazard and threat information, and identifying the components of a completed hazards analysis and threat assessment.

Because of the interdisciplinary nature of hazards analysis and threat assessment work, training audiences should be heterogeneous and, whenever possible, small-group work should be conducted to encourage cross-disciplinary interactions. Integration of the information learned by the trainee can be demonstrated in a post-class activity involving the development of a limited hazards analysis and threat assessment using data from the trainee's home jurisdiction or facility, or scenarios provided by the instructor. Members of planning teams that are conducting a complex hazard analysis and threat assessments should be trained together, if possible, with student activities based on actual work responsibilities and assignments.

Recommended Training Objectives

Key Objectives

HAZAN - 1 Describe the process to be used for conducting a hazard analysis and threat assessment study.

HAZAN - 2 Explain how to identify hazards and situations that pose a threat in the planning area sufficiently serious to be included in the hazard analysis and threat assessment.

HAZAN - 3 Describe the steps involved in analyzing and mapping vulnerabilities in the planning area.

HAZAN - 4 Explain how to assess the risk of injury or damage due to a potential hazardous materials release or terrorist incident in the planning area.

HAZAN - 5 Describe the steps involved in preparing a comprehensive hazard analysis and threat assessment report.

HAZAN - 1

Given an assignment to conduct a hazards analysis and threat assessment for a jurisdiction or facility, describe the process to be used for conducting the study.

HAZAN - 1.1

Describe the purpose and benefits of conducting a hazards analysis and threat assessment, including appropriate applications of the results in planning.

HAZAN - 1.2

Describe the basic steps in a hazards analysis and threat assessment (hazards identification, threat identification, vulnerability analysis, risk analysis).

HAZAN - 1.3

Identify types and sources of information commonly used in hazards analysis and threat assessment.

HAZAN - 2

Given an assignment to conduct a hazards analysis and threat assessment for a jurisdiction or facility, explain how to identify hazards and situations that pose a threat in the planning area sufficiently serious to be included in the hazard analysis and threat assessment.

HAZAN - 2.1

Describe the process and data sources, including Tier II annual reports, to be used for hazards and threat identification.

HAZAN - 2.2

Identify the location of hazardous materials facilities and major transportation routes within the planning area.

HAZAN - 2.3

Identify the types, quantities, and specific locations of hazardous materials used by facilities within the planning area.

HAZAN - 2.4

Identify the types and quantities of hazardous materials transported in or through the planning area.

HAZAN - 2.5

Assess the storage conditions of hazardous materials in the planning area (e.g., containment, packaging, security, release detection).

HAZAN - 2.6

Identify the nature of hazards (e.g., flammable, explosive, toxic) most likely to accompany hazardous materials spills or releases.

HAZAN - 2.7

Identify types of terrorist targets for each of the following areas within a jurisdiction: transportation system and commuting routes, public works facilities, public gathering areas, hazardous materials facilities and storage areas, communications systems, targets with high economic impact, and areas of symbolic or historical value.

HAZAN - 2.8

Identify the DHS Chemical Facility Anti-Terrorism Standard program and the information it can provide regarding the terrorism threat to chemical facilities within a community.

HAZAN - 3

Given the results of the hazard identification and threat assessment, describe the steps involved and demonstrate the ability to analyze and map the vulnerability of people, property, business interests, and environments in the planning area.

HAZAN - 3.1

Describe the process and data sources to be used for vulnerability analysis.

HAZAN - 3.2

Identify methods to screen and prioritize hazards for more in-depth analysis.

HAZAN - 3.3

Identify the level of concern for chemical hazards.

HAZAN - 3.4

Estimate the credible worst-case scenario for hazardous materials and terrorist incident threats.

HAZAN - 3.5

Determine the extent of vulnerable zones for identified hazards using worst-case scenarios.

HAZAN - 3.6

Map vulnerable zones, and identify conditions that influence the zone of impact.

HAZAN - 3.7

Identify susceptible human populations, property, business interests, and environments in the vulnerable zone, including high-risk populations, critical facilities, and sensitive environments.

HAZAN - 4

Given a hazard identification, threat assessment and vulnerability analysis for a community or facility, explain how to assess the risk of injury or damage due to a hazardous materials release or terrorist incident in the planning area.

HAZAN - 4.1

Describe the process and data sources to be used for risk assessment.

HAZAN - 4.2

Estimate the probability of occurrence of worst-case scenarios, and describe unusual conditions, such as the possibility of simultaneous incidents.

HAZAN - 4.3

Assess community and facility safeguards, response capabilities in place, and incident histories (as necessary).

HAZAN - 4.4

Describe the type of harm to human populations and damage to property, business interests, and environments expected in worst-case situations.

HAZAN - 4.5

Categorize, prioritize, and/or rank hazards and threats for planning, as appropriate.

HAZAN - 5

Given the hazard and threat identification, vulnerability analysis, and risk assessment for a community or facility, describe the steps involved and demonstrate the ability to prepare a comprehensive hazard analysis and threat assessment report.

HAZAN - 5.1

Identify and describe hazards, threats and related conditions in the planning area.

HAZAN - 5.2

Describe the vulnerability of populations, property, business interests, and environments to hazardous materials and terrorist threats in the planning area.

HAZAN - 5.3

Describe the risk of injury and/or damage from hazardous materials and terrorist incidents in the planning area, and prioritize risks for planning, as appropriate.

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Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Capability Assessment

Introduction

A capability assessment provides information designed to help the planning team evaluate preparedness, prevention, and response resources and capabilities. It includes an assessment of fixed site business and industry resources, transportation resources, and community (response and government agency) resources that could be called on in the event of a potential emergency identified in the jurisdiction's or facility's hazards analysis.

Training should provide the knowledge and skills necessary to conduct a capability assessment for a jurisdiction or facility. Skill development should include the ability to assess the jurisdiction's or facility's capability assessment needs, determine appropriate methods, collect and interpret data, and report the results. Specifically included is the use of checklists, criteria, surveys, and other methods to identify available resources, determine requirements for accessing them, evaluate deficiencies in existing plans and procedures, and assess the effectiveness of emergency response, prevention, and recovery efforts. The successful accomplishment of training objectives should result in enhanced student proficiency in applying general principles of capability assessment to specific jurisdiction or facility planning needs and processes.

Training Audience

Potential training audiences include all participants in a jurisdiction or facility planning process that have been assigned responsibility for conducting a capability assessment study. Possible audience members include:

- Community planning team members
- Facility planners and managers
- Response agency representatives
- Prevention personnel
- Technical experts and consultants

Prerequisites or Presumed Prior Student Knowledge/Skills

Students are assumed to possess the knowledge and skills addressed in the Core Planning Competencies. Consideration should be given to students that have a defined responsibility for conducting a higher-level capability assessment as a regular part of their job for a jurisdiction or facility.

Typical Program Format

The typical format is an instructor-led program, approximately one to two days in length. Longer programs may be appropriate where more complex studies are planned or when actual departmental response performance surveys are included as training activities.

Training managers may wish to combine this instruction with a module on hazard analysis for audiences that perform both tasks.

Methodology and Training Delivery Recommendations

Training should focus on providing knowledge of the steps and components of a comprehensive capability assessment and on developing related skills. Trainees must understand the significance and application of capability assessment information, and develop the ability to recognize and develop useful and meaningful data on which to base subsequent emergency operations planning and prevention programmatic and organizational decisions.

Much of the content for assessing capabilities can be introduced through self-study, but training should include formal classroom instruction with significant time spent in individual and small-group work. Activities should focus on skill development in extracting capability assessment information from available data sources, identifying and assessing existing resources, assessing the effectiveness of emergency management activities, and identifying and evaluating planning shortfalls.

Integration of the information learned by the trainee can be demonstrated in a post-class activity involving the development of a limited capability assessment based on the hazards analysis and resource data from the trainee's home jurisdiction or facility, or from scenarios provided by the instructor. Content testing is appropriate for demonstrating knowledge of the steps involved in capability assessment, listing types of community and facility resources, and identifying the components of a completed capability assessment.

Recommended Training Objectives

Key Objectives

CAP - 1 Describe the process to be used for conducting a capability assessment for a jurisdiction or facility.

CAP - 2 Explain how to assess the adequacy of existing resources for preparedness, prevention/mitigation, response and short-term recovery activities.

CAP - 3 Describe how to assess a jurisdiction's or facility's capability to prepare for, respond to, and recover from worst-case incidents identified in the hazard analysis.

CAP - 4 Identify the steps involved in assessing the jurisdiction's or facility's capability to prevent or mitigate the effects of identified risks.

CAP - 5 Explain how to prepare a comprehensive written capability assessment report.

CAP - 1

Given an assignment to conduct a capability assessment for a jurisdiction or facility, describe the process to be used for conducting the study.

CAP - 1.1

Describe the purpose and benefits of conducting a capability assessment, including appropriate applications of the results in planning.

CAP - 1.2

Describe the advantages and disadvantages of alternative methods for conducting the capability assessment (checklists, criteria, surveys, expert panels, etc.).

CAP - 1.3

Identify specific types and sources of information needed to conduct the capability assessment.

CAP - 2

Identify specific types and sources of information needed to conduct the capability assessment.

CAP - 2.1

Determine the type, amount, capabilities, and accessibility of existing facility resources.

CAP - 2.2

Determine the type, amount, capabilities, and accessibility of existing transporter resources.

CAP - 2.3

Determine the type, amount, capabilities, and accessibility of existing community resources.

CAP - 2.4

Describe EPA's Safety Performance Indicators Program and its value in identifying the capabilities of a fixed facility and first response community.

CAP - 3

Given hazardous materials and terrorist incident response plans and SOPs, a completed hazard and threat analysis, an evaluation of existing resources, critiques of incidents, exercises, and drills, and other pertinent information, describe how to assess the jurisdiction's or facility's capability to prepare for, respond to, and recover from worst-case incidents identified in the hazard analysis.

CAP - 3.1

Evaluate response issues and concerns identified through surveys and reviews of hazardous materials incident critiques, exercises, and drills.

CAP - 3.2

Assess the adequacy of the jurisdiction's or facility's concept of operations, including roles and functional assignments, for responding to and recovering from worst-case incidents.

CAP - 3.3

Assess the adequacy of existing resources for implementing the concept of operations in worst-case incidents.

CAP - 3.4

Assess the adequacy of organizational policies and SOPs for implementing the concept of operations in worst-case incidents.

CAP - 3.5

Assess the level of competency of emergency personnel to respond in worst-case incidents identified in the hazard analysis.

CAP - 4

Given hazardous materials and terrorist incident response plans and SOPs, a completed hazard and threat analysis, an evaluation of existing resources, critiques of incidents, exercises, and drills, and other pertinent information, identify the steps involved and demonstrate the ability to assess the jurisdiction's or facility's capability to prevent or mitigate the effects of identified risks.

CAP - 4.1

Evaluate prevention issues and concerns identified through surveys or reviews of hazardous materials incident critiques, exercises, and drills.

CAP - 4.2

Assess the adequacy of prevention measures, including roles and functional assignments, for preventing or mitigating the effects of identified risks.

CAP - 4.3

Assess the adequacy of existing resources for implementing necessary prevention measures.

CAP - 4.4

Assess the adequacy of organizational policies and SOPs for implementing necessary prevention measures.

CAP - 4.5

Assess the level of competency of prevention personnel to implement necessary prevention measures.

CAP - 5

Given the results of the capability assessment analysis, explain how to prepare a comprehensive written capability assessment report.

CAP - 5.1

Describe preparedness, mitigation/prevention, response, and short-term recovery capability shortfalls identified in the analysis.

CAP - 5.2

Identify additional resources that may be needed to prepare for, prevent/mitigate, respond to, and recover from worst-case hazardous materials incidents.

CAP - 5.3

Describe deficiencies in community and/or facility safety plans and procedures identified in the analysis, and recommend modifications, as appropriate.

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Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Protective Actions Planning

Introduction

Planning for protective actions addresses policy and procedures for providing personal protection to the public, including protection in place and evacuation. Considerations include public education, alert and warning systems, the availability of appropriate shelter, the nature and duration of hazardous materials releases, traffic flow and control, reception and care facilities, health and medical services, protection of water and sewage systems, ongoing incident assessment, and other emergency response functions and capabilities.

Training should provide a working knowledge of the benefits and limitations of various protection strategies, including evacuation, in-place protection, and a combination thereof. Participants should gain an understanding of the need for protective action planning and important planning considerations. They should develop the ability to implement a decision-making process for any given hazardous materials emergency or terrorist incident situation and respective protective action options, and learn strategies and techniques for communicating the desired protection action to the general public to elicit the best possible response.

Plans for protective actions must address roles, strategies, and procedures for a broad range of emergency preparedness and response activities. Depending on the jurisdiction's or facility's needs, planning may involve very complex analyses, decisions, and negotiations that must be addressed before incidents occur. Therefore, the goal of training is to give participants the knowledge and skills they need to assess existing capabilities in this area, identify needed resources, and establish systems for promoting effective response in any realistic hazardous materials incident scenario.

Training Audience

The training audience includes decision makers, planning team members, SOP writers, and agency and organization representatives with responsibilities related to mass care and protective actions in hazardous materials emergencies. Possible audience members include:

- Community planning team members
- Local Emergency Planning Committees
- Tribal Emergency Response Committees
- Government and response agency representatives
- Facility planners and managers
- Community support services and volunteer group representatives
- Incident Commanders
- Public Information Officers
- Early Warning Officers
- Emergency Management Officials
- Technical experts and consultants

Prerequisites or Presumed Prior Student Knowledge/Skills

Students should have mastered basic skills in hazardous materials and terrorism incident response planning, and have assigned responsibilities for hazardous materials and terrorist incident response planning for a jurisdiction or facility. They should possess the knowledge and skills addressed in the Core Planning Competencies, and they should understand basic concepts of the Incident Command System, public relations and education, intelligence and information sharing, and emergency information and warning.

Typical Program Format

The typical format is an instructor-facilitated one to two day program with lecture/discussion, student and/or tabletop exercises, and case study reviews. Longer programs may be appropriate where more complex studies, student activities, and field work are planned.

Methodology and Training Delivery Recommendations

Planning for protective actions requires knowledge and skills in a broad range of disciplines and emergency response functions. Typically, many different government agencies, community organizations, and private sector groups are assigned related responsibilities under the emergency plan. For these reasons, the use of planning teams is particularly suited for this type of planning. Whenever possible, planning teams should be trained together to promote information sharing, intelligence sharing, inter-organizational understanding, and cooperation. Other considerations include:

- The training competencies identified for this curriculum area assume that a comprehensive hazards and threat analysis and capability assessment have been completed for the jurisdiction or facility. If this assumption is incorrect, training managers may wish to incorporate additional competencies from other planning specialty areas in the instruction.
- Instructional content should stress the interrelationships among planning processes, preparedness activities, response actions, intelligence information, and the public information and education components of emergency management.
- Training methodologies should emphasize small-group interactions among various participants in the planning process. Hazardous materials and terrorist incident case examples should be incorporated into the course, using student activities or tabletop exercises to promote and evaluate skill/learning objectives.
- An instructional cadre concept, emphasizing diverse organizational interests and expertise, is particularly appropriate for this type of training.

Recommended Training Objectives

Key Objectives

PROTECT - 1 Identify decision-making criteria for implementing protective actions.

PROTECT - 2 Describe procedures for assessing existing systems, strategies, and procedures for notifying, warning, and informing the public about protective action decisions.

PROTECT - 3 Identify procedures for assessing existing systems, strategies, and procedures for evacuating populations at risk in a hazardous material or terrorist incident.

PROTECT - 4 Describe procedures for assessing existing systems, strategies, and procedures for implementing in-place sheltering and other protective actions in a hazardous materials or terrorist incident.

PROTECT - 5 Identify the needed elements of protective action emergency plans and procedures and describe the process for developing those plans and procedures.

PROTECT - 1

Given a hazards and threat analysis and capability assessment for a jurisdiction or facility, identify decision-making criteria for implementing protective actions.

PROTECT - 1.1

Describe the purpose and benefits of various protective action strategies, including evacuation, in-place sheltering, water supply protection, sewage system protection, and relocation.

PROTECT - 1.2

Compare the advantages and disadvantages of evacuation and in-place protection options for mass care in hazardous materials emergencies.

PROTECT - 1.3

Identify factors to consider in selecting a protective action strategy in a hazardous materials or terrorist incident situation, including:

- The nature of the threat-intelligence
- The population at risk
- Time factors involved
- Weather conditions

- Communications
- Response capabilities

PROTECT - 1.4

Identify and assess resources available for implementing various protective actions, including capabilities of organizations assigned related responsibilities under the plan.

PROTECT - 1.5

Develop decision-making criteria for implementing protective actions that address evacuation (precautionary, general, and selective), in-place sheltering, and other options in emergency situations identified in the hazards analysis.

PROTECT - 2

Given the assignment to plan for protective actions for a jurisdiction or facility, describe procedures for assessing existing systems, strategies, and procedures for notifying, warning, and informing the public about protective action decisions.

PROTECT - 2.1

Identify factors that influence the public's understanding of and response to protective actions in hazardous materials emergencies.

PROTECT - 2.2

Assess existing public education programs for informing the public about protective actions in the event of a hazardous materials emergency, including citizen roles and responsibilities.

PROTECT - 2.3

Assess existing warning and emergency public notification systems for implementing protective actions in a hazardous materials emergency.

PROTECT - 3

Given a hazards and threat analysis and capability assessment for a jurisdiction or facility, identify procedures for assessing existing systems, strategies, and procedures for evacuating populations at risk in a hazardous material or terrorist incident.

PROTECT - 3.1

Identify eight considerations when planning an evacuation, as follows:

- Emergency scene access and evacuation routes
- Areas of responsibility
- Geographical area, size and type

- Evacuation area
- Weather conditions
- Transportation
- Resisters
- Mass care centers and shelters

PROTECT - 3.2

Identify four constraints to an effective evacuation, as denoted in the Hans and Sells Study conducted for the U.S. Environmental Protection Agency, as follows:

- Time delay
- Notification time
- Mobilization time
- Travel time

PROTECT - 3.3

Identify six steps for implementing the evacuation process, as follows:

- Form work groups
- Track personnel assignments
- Use map coordinates for making assignments
- Issue evacuation warnings
- Identify relocation shelters
- Use the three-phase notification process
- Re-entry or return procedures/process (PROTECT - 3.6)

PROTECT - 3.4

Assess systems, strategies, and procedures for moving people out of risk areas (availability of vehicles, evacuation routes and alternatives, controlling traffic, special populations, etc.).

PROTECT - 3.5

Assess preparedness for reception and care of evacuees (shelter locations, supplies, notifying family members, health and medical care, mutual aid agreements, etc.).

PROTECT - 3.6

Assess decision-making criteria and procedures for re-entry after an evacuation.

PROTECT - 4

Given a hazards and threat analysis and capability assessment for a jurisdiction or facility, describe procedures for assessing existing systems, strategies, and procedures

for implementing in-place sheltering and other protective actions in a hazardous materials or terrorist incident.

PROTECT - 4.1

Assess systems, strategies, and procedures for initiating and implementing in-place protection.

PROTECT - 4.2

Assess systems, strategies, and procedures for initiating and implementing water supply protection.

PROTECT - 4.3

Assess systems, strategies, and procedures for initiating and implementing sewage system protection.

PROTECT - 4.4

Assess systems, strategies, and procedures for monitoring toxic releases, continually assessing the potential for injury and damage, notifying the public as necessary, and terminating response activities.

PROTECT - 5

Given an assessment of the jurisdiction's or facility's capabilities to implement protective action options in hazardous materials or terrorist incidents, identify the needed elements of related emergency plans and procedures and describe the process for developing those plans and procedures.

PROTECT - 5.1

Describe potential problems and capability shortfalls for implementing protective actions in worst-case hazardous materials or terrorist incidents.

PROTECT - 5.2

Identify additional resources that may be needed to prepare for and implement protective actions in worst-case hazardous materials incidents.

PROTECT - 5.3

Identify recommended changes to hazardous materials and terrorist incident response plans (addressing, for example, sections on the concept of operations, roles and responsibilities, direction and control, warning systems and emergency public notification, resource management, health and medical, personal protection of citizens, ongoing incident assessment, and human services).

PROTECT - 5.4

Describe modifications to jurisdiction and/or facility policies and procedures that are required to facilitate the recommended plan changes.

Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Plan Implementation and Maintenance

Introduction

Training in this curriculum area will provide students with the knowledge, skills, and practical tools they need to successfully implement a completed hazardous materials and terrorist incident response plan, anticipate future outcomes, monitor and evaluate the plan's effectiveness, and revise it as appropriate to improve the jurisdiction's or facility's emergency operations and prevention/mitigation capabilities. Instruction builds on Planning Essentials competencies to help participants develop the feedback loop necessary for long-term plan maintenance and enhancement.

The content of training addresses (1) plan implementation, including promulgation and dissemination of the plan, orientation of plan users, and integration of multi-jurisdictional planning efforts; (2) validation of the plan, including methods of plan review, plan testing, and exercising; and (3) plan maintenance, including development of strategies and processes to identify, illuminate, and correct problems with the plan. Other subject areas potentially include environmental scanning, management audits, performance audits, and other long-term and strategic planning concepts.

Training focuses on the role of the planning manager or administrator in establishing systems and strategies for plan implementation and maintenance. This person may also participate in (and need training in) the actual writing and development of the plan, as defined in Planning Essentials and other Planning Specialties areas. Furthermore, the planning manager or administrator may function as the jurisdiction's or facility's Exercise Manager/Officer. However, advanced competencies in exercise design and development will be covered in a separate Planning Specialty area in subsequent editions of these Guidelines.

Training Audience

The training audience includes all personnel involved in the implementation, validation, and maintenance of a completed hazardous materials and terrorist incident response plan for their respective jurisdiction or facility. Audience members potentially include planners and decision makers for agencies and organizations represented in the plan, community leaders, and others interested in improving hazardous materials preparedness. Possible audience members are:

- Community planning team members
- Local Emergency Planning Committee members
- Government and response agency representatives
- Facility planners and managers
- Community support services and volunteer group representatives
- Exercise program managers and exercise officers
- Emergency Management Officials
- Technical experts and consultants

Prerequisites or Presumed Prior Student Knowledge/Skills

Students should possess the knowledge and skills addressed in the Core Planning Competencies and previous experience in community or organizational planning. They should have job responsibilities directly related to the management and administration of hazardous materials and terrorist incident response plans and planning processes for a jurisdiction or facility.

Typical Program Format

The typical format is one to two days of classroom instruction with an emphasis on activities designed to help students develop strategies and mechanisms to assess, evaluate, and refine existing hazardous materials incident response plans. Job aids to facilitate later work may be desirable. Training program managers may wish to combine this instruction with more in-depth materials on exercise design and development for audiences that perform both roles.

Methodology and Training Delivery Recommendations

Ideally, training audiences should be heterogeneous, reflecting the wide range of personnel involved in the integrated hazardous materials and terrorist incident planning process. If possible, individuals who work together as members of a planning team should be trained together.

Training methodologies should emphasize small group interactions and practical activities based on actual plans and realistic situations. Because teamwork and continuity are important in plan implementation and maintenance, it is recommended that student groupings be maintained throughout training.

Generic case studies or scenarios should be available for use with audiences from diverse communities and organizations. The instructor should be able to flexibly tailor, update, or substitute these materials, depending on audience needs.

Training emphasizes skills and attitudes needed for students to become effective long-term community change agents. Emphasis will be placed on methods and techniques for effecting meaningful change.

Recommended Training Objectives

Key Objectives

PLAN IMP - 1 Describe the steps for developing a strategy for plan implementation.

PLAN IMP - 2 Identify strategies that ensure proper promulgation and dissemination of the plan.

PLAN IMP - 3 Describe strategies that will ensure coordination with multi-jurisdictional planning efforts.

PLAN IMP - 4 Identify strategies that will ensure that organizations and personnel are capable of carrying out their assigned responsibilities.

PLAN IMP - 5 Describe appropriate strategies for monitoring changes and trends that impact the plan or planning process.

PLAN IMP - 6 Identify tasks to be performed in the design and development of an exercise program that is useful for evaluating and updating the plan.

PLAN IMP - 7 Describe appropriate strategies for conducting periodic reviews and updates of the plan.

PLAN IMP - 1

Given the goals and objectives of the integrated hazardous materials and terrorist incident response planning process for a jurisdiction or facility, describe the steps for developing a strategy for plan implementation.

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PLAN IMP - 1.1

List organizations and key personnel who should participate in plan implementation, including:

- Planning team members
- Organizations, groups, and facilities assigned responsibilities under the plan
- Local, state, and federal oversight agencies
- Community support services organizations affected by the plan

PLAN IMP - 1.2

Establish objectives for plan review and validation as part of the plan development process.

PLAN IMP - 2

Given a completed integrated hazardous materials and terrorist incident plan for a jurisdiction or facility, identify strategies that ensure proper promulgation and dissemination of the plan.

PLAN IMP - 2.1

Identify the steps necessary to ensure proper promulgation of the plan.

PLAN IMP - 2.2

Determine the information needs of various groups, and develop strategies to orient them to their roles and assignments under the plan.

PLAN IMP - 2.3

Develop strategies to orient the public on the plan, including clarifying technical information as necessary to promote public understanding.

PLAN IMP - 3

Given an approved integrated hazardous materials plan for a jurisdiction or facility, describe strategies that will ensure coordination with multi-jurisdictional planning efforts.

PLAN IMP - 3.1

Identify and assess options for coordinating and integrating the plan within the jurisdiction and/or facility.

PLAN IMP - 3.2

Develop strategies to communicate the substance of the plan to other jurisdictions, including surrounding communities, state offices, and federal (national/regional) personnel involved in related planning efforts.

PLAN IMP - 3.3

Develop strategies to establish communication links with local, state, and federal organizations to obtain feedback on emergency management program changes that may affect the plan.

PLAN IMP - 4

Given an approved integrated hazardous materials plan for a jurisdiction or facility, identify strategies that will ensure that organizations and personnel are capable of carrying out their assigned responsibilities.

PLAN IMP - 4.1

Develop strategies to ensure that each organization develops the SOPs necessary to facilitate the accomplishment of assigned tasks under the plan.

PLAN IMP - 4.2

Develop strategies to assess related training needs.

PLAN IMP - 4.3

Identify training programs and assistance available in the public and private sectors.

PLAN IMP - 5

Given implementation of an approved integrated hazardous materials plan for a jurisdiction or facility, describe appropriate strategies for monitoring changes and trends that impact the plan or planning process.

PLAN IMP - 5.1

Identify changes and trends that could impact the plan or planning process, including but not limited to:

- Economic
- Legal
- Political
- Technological
- Social
- Demographic

PLAN IMP - 5.2

Identify strategies for collecting and assessing information from reviews or critiques of actual hazardous materials incidents affecting the jurisdiction.

PLAN IMP - 5.3

Identify strategies to ensure that various organizations with a role under the plan provide feedback as changes occur that may affect the plan.

PLAN IMP - 6

Given implementation of an approved integrated hazardous materials and terrorist incident response plan for a jurisdiction or facility, identify tasks to be performed in the design and development of an exercise program that is useful for evaluating and updating the plan.

PLAN IMP - 6.1

Describe six types of exercises and their appropriate use in plan evaluation, to include:

- Drill
- Workshop
- Seminar
- Table top
- Functional
- Full Scale

PLAN IMP - 6.2

Identify the goals and objectives of the hazardous materials and terrorist incident response exercise programs and their relationship to the overall planning process.

PLAN IMP - 6.3

Identify methods to be used for determining hazardous materials and terrorist incident response exercise needs, addressing at a minimum:

- Number and type of exercises to be conducted
- Functions to be tested (preparedness, response, recovery, and mitigation/prevention)
- Exercise goals and objectives
- Appropriate scenarios
- Scope
- Objectives
- Core Capabilities
- Functions to be tested
- Scenario
- Location(s)
- Date & Times
- Participation

PLAN IMP - 6.4

Identify exercise criteria, resources, and reference materials.

PLAN IMP - 6.5

On specific exercises, establish effective policies and plans for working with the Exercise Manager, organizational participants, and others to:

- Exercise planning elements
- Conduct the exercise
- Control the exercise

- Recruit and brief participants
- Record and evaluate exercise play
- Critique exercise results and identify follow-up actions

PLAN IMP - 7

Given changes and trends that impact the plan or planning process, incident critiques, exercise results, expert opinion, and other information, describe appropriate strategies for conducting periodic reviews and updates of the plan.

PLAN IMP - 7.1

Determine whether goals and objectives established in the plan have been achieved.

PLAN IMP - 7.2

Evaluate changes and trends, incident critiques, exercise results, expert opinion, and other information to assess the need for plan revisions.

PLAN IMP - 7.3

Identify strategies for making the needed revisions to the plan and for implementing the plan revisions.

PLAN IMP - 7.4

Identify strategies and timetables for reviewing and updating the plan on a regular basis.

Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Facility Planning

Introduction

Facility Planners develop, validate, and maintain emergency response plans and safety plans for any facility subject to federal contingency planning regulations, as well as other facilities that wish to improve emergency preparedness through planning. They also develop procedures to ensure compliance with federal, state, tribal, and local mandates for participation in community planning and right-to-know activities. In this context, the term “facility” is meant to have a wide connotation and may include, but is not limited to, any mobile or fixed onshore or offshore building, structure, installation, equipment, pipe, or pipeline. The Facility Planning specialty area provides participants with the knowledge and skills they need to develop a basic hazardous materials and terrorist threat emergency plan for a facility. The primary training audience is facility planners and planning team members. Training objectives cover a broad range of generic competencies, including the ability to function effectively in a team environment; assist in or conduct a basic hazards and threat analysis and capability assessment; work with others to analyze options and draft sections of the plan; and participate in plan implementation, evaluation, and maintenance.

The legislative and regulatory basis for this training can be found primarily in the requirements specified in OSHA 1910.120 for development of employers’ emergency response plans, SARA Title III for development of planning jurisdictions’ emergency response plans, and various federal agency regulations for the development of facility and transporter emergency response plans. The competencies defined here incorporate generic concepts and processes derived from various sources in the planning literature. Several of the most important reference documents, and more specific models for planning, are described in the Appendix. The training objectives are intended to be comprehensive, i.e., to address the requirements of all identified audience members; thus, training developers and instructors will need to tailor these objectives to meet local audience interests, needs, and planning processes.

Training Audience

The training audience for Facility Planning includes planning team members who have a defined responsibility in researching, preparing, implementing, and maintaining hazardous materials and terrorist threat facility plans. These persons generally represent an organizational or functional specialty in an integrated planning process for the facility. Audience members may include industry owners and executives, business planners, production/process managers, functional managers (e.g., communications, public information, emergency response, etc.), safety officers, technical experts, consultants, and others employed by the facility. Personnel who have responsibilities for reviewing and approving facility plans and/or enforcing compliance with existing community regulations and standards may also benefit by training.

Prerequisites or Presumed Prior Student Knowledge/Skills

Training covers basic skills, with an emphasis on the ability to interpret and use information provided by various technical specialists in developing the plan. More advanced planning skills are addressed under other Planning Specialties. Audience members are assumed to already possess the knowledge and skills addressed in the Core Planning Competencies, as well as an expertise in the professional discipline that the student represents on the planning committee. It is further assumed that managerial, administrative, and logistic requirements for organizing the planning process, including staff recruitment and assignments, have already been met.

Typical Program Format

Training can typically be accomplished in two to four days of classroom instruction led by an experienced facilitator. Breaking training into modules (e.g., Hazards Analysis and Threat Assessment) that are delivered at different times is also possible, and this approach may be beneficial if timed to coincide with planning team assignments. However, team building is very important in the planning process, so continuity of student groupings throughout training is recommended.

Methodology and Training Delivery Recommendations

It is recognized that the planning needs of facilities, and the resulting training needs of planning team members, can vary greatly, depending on such factors as business size, demographics, product mix, hazards, local resources, and planning preferences. However, training described here is intended to address the generic training requirements of all hazardous materials facility planners. Training managers, course developers, and instructors may need to tailor these materials to meet the unique needs and interests of different audiences, incorporating elements covered in other Planning Specialties, as appropriate. Other training considerations include the following:

- Training should focus on the actual development of facility plans, with the work product and participation in the group planning process used to demonstrate student mastery of the objectives.
- Audiences should be heterogeneous, reflecting the diverse groups and professional disciplines represented in the planning process. It is highly recommended that team members who will work together in subsequent planning efforts be trained together.
- Course methodology should emphasize group interactions, team building, and resolution of interpersonal conflicts, as well as the development of the plan product itself.
- Course materials can be multi-tracked by type of plan (OSHA, EPA, etc.) to facilitate tailoring the instruction to the needs of different audiences.

- If possible, instruction should address practical strategies for consolidating planning requirements (i.e., merging several requirements into one plan development effort) to foster greater planning efficiency.
- Instruction should emphasize the need for ongoing planning commitments by the team and the organizations they represent.
- Instruction should emphasize the need for ongoing evaluation at each step in the planning process.
- Instructors should emphasize that steps in the planning process, although taught sequentially, may actually be performed simultaneously.

Recommended Training Objectives

Key Objectives

FACIL - 1	Describe an appropriate facility planning strategy and team member responsibilities in the process.
FACIL - 2	Identify the steps involved in conducting a review of federal, state and local authorities applicable to the facility planning process.
FACIL - 3	Describe the methods to be used in conducting background research appropriate to the facility planning requirement.
FACIL - 4	Identify strategies that will ensure that organizations and personnel are capable of carrying out their assigned responsibilities.
FACIL - 5	Explain how to identify, collect and interpret hazards and threat analysis and capability assessment data needed for facility planning.
FACIL - 6	Identify issues and solutions to be addressed in the facility plan, and assignments for developing the facility plan.
FACIL - 7	Describe tasks to be performed in developing or updating the hazardous materials and terrorist incident emergency operations facility plan, to address preparedness, response and short-term recovery.
FACIL - 8	Identify tasks to be performed in developing or updating a comprehensive prevention/mitigation section of the facility plan.
FACIL - 9	Describe tasks to be performed the plan review and appraisal process.
FACIL - 10	Describe strategies and identify methods for implementing the plan.
FACIL – 11	Describe appropriate strategies and identify methods for evaluating and maintaining the facility plan.

FACIL - 1

Given an assignment as a facility planning team member, describe an appropriate planning strategy and team member responsibilities in the process.

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FACIL - 1.1

Describe the benefits of a team approach to planning, and identify skills necessary to participate in the team planning process.

FACIL - 1.2

Identify individual roles and responsibilities in the facility planning process, to include work expectations, administrative support systems, and time lines.

FACIL - 1.3

Identify the need to coordinate planning with outside groups (e.g., local government, surrounding jurisdictions, state offices, federal/regional offices such as EPA and FEMA, RRTs, and CAER.)

FACIL - 1.4

Demonstrate understanding of the planning process mission statement, goals, and objectives.

FACIL - 1.5

Describe the expected results of the planning process, to include required planning elements and plan format.

FACIL - 1.6

Identify resources needed to conduct the planning process, including personnel, budgets, and technical capabilities, and solicit these resources within the company.

FACIL - 2

Given an assignment as a facility planning team member, identify the steps involved and demonstrate the ability to conduct a review of federal, state, and local authorities applicable to the planning process.

FACIL - 2.1

Describe the purpose and benefits of completing a review of existing plans and authorities.

FACIL - 2.2

Identify methods and procedures for reviewing plans and authorities (collecting and organizing information, identifying and clarifying issues, identifying incompatibilities and shortfalls, etc.), including associated costs and staffing requirements.

FACIL - 2.3

Identify planning regulatory requirements that apply to the facility, to include consideration of:

- SARA Title III-Emergency Planning and Community Right-to-Know Act (EPCRA)
- EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements)— and 112.20 to 112.21
- BSEE's Facility Response Plan Regulation—30 CFR part 254
- PHMSA's Pipeline Response Plan Regulation—49 CFR part 194
- USCG's Facility Response Plan Regulation—33 CFR part 154, subpart F
- EPA's Risk Management Programs Regulation—40 CFR part 68
- OSHA's Emergency Action Plan Regulation—29 CFR § 1910.38(a)
- OSHA's Process Safety Standard—29 CFR § 1910.119
- OSHA's HAZWOPER Regulation—29 CFR § 1910.120
- EPA's Resource Conservation and Recovery Act Contingency Planning Requirements—40 CFR part 264, subpart D, 40 CFR part 265, subpart D, and 40 CFR § 279.52 State and local policies, codes, ordinances, etc.
- EPCRA §§ 300 through 313

DHS Chemical Facility Anti-Terrorism Standard (2014)FACIL - 2.4

Describe the advantages and disadvantages of all-hazard planning and hazard-specific planning.

FACIL - 3

Given an assignment as a facility planning team member, describe the methods to be used in conducting background research appropriate to the planning requirement.

FACIL - 3.1

Identify critical internal and external products, services, and operations that impact the facility plan, including:

- Internal products and services and the facilities and equipment needed to produce them
- External products and services provided by suppliers, especially sole source vendors

- Services such as electrical power, water, sewer, gas, telecommunications, and transportation
- Operations, equipment, and personnel vital to the continued functioning of the facility

FACIL - 3.2

Identify, gather, and review copies of existing hazardous materials and terrorist incident response plans (community emergency plans, mitigation/prevention plans, response agency SOPs, facility plans, etc.).

FACIL - 3.3

Review critiques of actual incidents, exercises, and drills conducted by the facility or by the community with participation by the facility.

FACIL - 3.4

Review important changes and trends impacting the facility.

FACIL - 3.5

Conduct surveys, interviews, etc. to gather expert opinion on planning needs, as required.

FACIL - 3.6

Identify and summarize related planning issues, priorities, concerns, and challenges.

FACIL - 4

Given the planning process to be used by the facility, identify the purpose, benefits, methods, expected results, and participant roles in hazards analysis and capability assessment.

FACIL - 4.1

Describe the purpose and benefits of conducting a hazards and threat analysis.

FACIL - 4.2

Describe the purpose and benefits of conducting a capability assessment.

FACIL - 4.3

Describe the methods to be used and the expected results of the facility's hazards and threat analysis and capability assessment processes.

FACIL - 4.4

Identify organizational and team member responsibilities in the facility's hazards and threat analysis and capability assessment processes, including the roles of various technical specialists.

FACIL - 5

Given the facility's production processes, potential hazards, and potential terrorist target areas, explain how to identify, collect, and interpret hazards and threat analysis and capability assessment data needed for planning.

FACIL - 5.1

Collect or assist in collecting data, as identified in Technical Guidance for Hazards Analysis.

FACIL - 5.2

Identify types of emergencies that have occurred in the community, at the facility, and in similar facilities.

FACIL - 5.3

Identify geographic factors that could contribute to potential emergencies.

FACIL - 5.4

Identify types of emergencies that could occur from technological process or system failures.

FACIL - 5.5

Identify types of emergencies that could occur as a result of human error.

FACIL - 5.6

Identify types of emergencies that could result from the design or construction of the facility and production processes.

FACIL - 5.7

Identify types of emergencies that could result from terrorist acts or other deliberate criminal sabotage.

FACIL - 5.8

For each potential emergency, identify possible complications and relationships to other emergency events, and estimate the probability of occurrence.

FACIL - 5.9

Identify and evaluate internal and external resources and capabilities that could be applied in an emergency.

FACIL - 5.10

Conduct an insurance review to identify and evaluate facility insurance coverage and benefits in various types of emergency situations.

FACIL - 5.11

Review and interpret the data.

FACIL - 5.12

Identify, map, and prioritize hazards, terrorist targets, risk areas, and vulnerable zones, and identify capability shortfalls and excesses (gap analysis).

FACIL - 6

Given the results of the facility's hazards and threat analysis and capability assessment, identify issues and solutions to be addressed in the plan, and assignments for developing the plan.

FACIL - 6.1

Identify issues and solutions to be addressed in the facility plan by examining existing plans, hazards and threat analysis results, capability assessment results, and other pertinent information.

FACIL - 6.2

Identify facility plan development tasks and assignments.

FACIL - 7

Given identified issues and solutions to be addressed in the facility plan, describe tasks to be performed in developing or updating the hazardous materials and terrorist incident emergency operations plan, to address preparedness, response and short-term recovery.

FACIL - 7.1

Identify the planning elements necessary to comply with regulatory requirements, standards, and guidelines.

FACIL - 7.2

Develop or update the emergency operations plan to meet the required planning elements.

FACIL - 8

Given identified issues and solutions to be addressed in the facility plan, identify tasks to be performed in developing or updating a comprehensive prevention/mitigation section in the plan.

FACIL - 8.1

Identify prevention/mitigation strategies and techniques to address the identified issues and solutions.

FACIL - 8.2

Develop or update the plan to meet all identified prevention/mitigation planning needs.

FACIL - 9

Given a draft facility hazardous materials and terrorist incident response plan, describe tasks to be performed in the plan review and appraisal process.

FACIL - 9.1

Describe the purpose and benefits of reviewing the facility plan.

FACIL - 9.2

Conduct an internal review of the draft facility plan to assess adequacy and completeness.

FACIL - 9.3

Facilitate an external review of the draft facility plan, which may include peer review, management review, and local, state and federal review.

FACIL - 9.4

Make necessary revisions, and promote formal plan promulgation.

FACIL - 10

Given an approved hazardous materials and terrorist threat facility plan, describe appropriate strategies and identify methods for implementing the plan.

FACIL - 10.1

Describe the purpose and benefits of implementing the plan.

FACIL - 10.2

Describe the strategy and methods to be used for implementing the plan, to include:

- Disseminating copies of the plan

- Briefing and orienting users of the plan
- Integrating the plan with other plans and work processes within the facility

FACIL - 10.3

Identify options and develop strategies for coordinating the plan with multi-jurisdictional planning efforts.

FACIL - 10.4

Identify options and develop strategies for ensuring that personnel are adequately trained to carry out their assigned responsibilities under the plan.

FACIL - 10.5

Identify roles and responsibilities for implementing the plan, to include available resources, administrative systems, and time lines.

FACIL - 11

Given an approved hazardous materials facility plan, describe appropriate strategies and identify methods for evaluating and maintaining the plan.

FACIL - 11.1

Describe the purpose and benefits of evaluating and maintaining the plan.

FACIL - 11.2

Identify options and develop strategies for monitoring changes and trends affecting the facility and/or jurisdiction.

FACIL - 11.3

Identify options and develop strategies for critiquing actual incidents and accidents that occur, and for identifying and implementing remedial actions.

FACIL - 11.4

Identify options and develop strategies for developing, conducting, and evaluating exercises and drills.

FACIL - 11.5

Identify options and develop strategies for conducting an annual audit of the facility plan and/or periodically updating and revising the facility plan, as necessary.

FACIL - 11.6

Identify roles and responsibilities for evaluating and maintaining the facility plan, to include available resources, administrative systems, and time lines.

FACIL - 11.7

Work with planning team members, facility managers, and other facility and community representatives to test planning concepts and measures (e.g., through tabletop exercises and drills), as necessary.

Hazardous Materials Incident Response Curriculum Guidelines

Mission Specific Planning Competencies:

Planning for Public Education

Introduction

Training in this curriculum area provides an overview of the hazardous materials and terrorist threat emergency management system, with an emphasis on the citizen's role in that system. No skill development is attempted. Training should result in a positive attitudinal change, an improved awareness of threats to personal and community safety, an enhanced understanding of the need for and benefits of jurisdictional and facility planning and emergency management, and motivation to improve personal and community preparedness.

Benefits to be derived from training the general public include a greater understanding of and support for the jurisdiction's emergency management system and capabilities; improved citizen understanding of appropriate actions to take in hazardous materials and terrorist incident emergency situations; heightened cooperation with responders and prevention/mitigation personnel; and enhanced citizen planning and preparedness for potential incidents in the home or neighborhood.

Note: There are several aspects and potential training requirements associated with hazardous materials and terrorist threat public education. These include training for Public Information Officers (PIOs) and others who design and develop related programs, strategies, and outreach materials; training for media representatives and others who influence the perceptions of the public; and training for planners in "marketing" the plan to gain public support for the planning process. The Planning Specialty area described here identifies general competencies for individual members of the public.

Training Audience

The audience for public education training includes all persons who have a "stake" in the hazardous materials and terrorist threat emergency management system, although they have no defined role in the development and implementation of emergency operations and mitigation/prevention plans. Potential audience members include the general public, community groups, volunteer groups, business/industry associations, employee groups, and others with a self-interest in improving community and individual/family preparedness.

Prerequisites or Presumed Prior Student Knowledge/Skills

Participants are assumed to have an interest in hazardous materials and terrorist threats facing the community, as well as the jurisdiction's ability to provide effective hazardous materials and terrorist threat emergency management. However, no prior knowledge of community plans and systems is required to participate in training.

Methodology and Training Delivery Recommendations

A typical program format for this training is a short (one to two hours or as need is expressed by the customer) facilitator-led presentation or seminar.

Training should emphasize opportunities for interaction with audience members to identify and address individual perceptions and concerns. Whenever possible, use of dynamic media (video, slides, computer simulations, CD-ROM, etc.) is encouraged to promote interest and motivate support. Depending on audience needs and time, simple activities, exercises, or role plays emphasizing local examples and realistic personal situations may be appropriate.

The instructor should be able to discuss a broad range of topics of potential interest to audience members, including the community's readiness to cope with terrorist threats, community and household hazardous materials threats; requirements of the Emergency Planning and Community Right to Know Act; pertinent jurisdiction and facility plans and capabilities; technical resources and ways to access community information Safety Data Sheet (SDS) forms, chemical inventories (Tier II & CFATS Reports), release reports, etc.), and materials available from EPA, Department of Transportation (DOT), FEMA, DHS, National Institute of Environmental Health Sciences (NIEHS), and other federal, state, tribal, and local sources.

Recommended Training Objectives

Key Objectives

EDUC - 1	Identify the purpose, benefits, and components of the jurisdiction's hazardous materials and terrorist threat emergency management system.
EDUC - 2	Describe the citizen's role in the jurisdiction's hazardous materials and terrorist threat emergency management system.
EDUC - 3	Identify personal actions to promote hazardous materials and terrorist threat emergency management.

EDUC - 1

Given residency in a specific jurisdiction, identify the purpose, benefits, and components of the jurisdiction's hazardous materials and terrorist threat emergency management system.

EDUC - 1.1

Describe the hazardous materials threat within the jurisdiction, to include the routine use of chemicals by the general public from everyday sources.

EDUC - 1.2

Describe the terrorist threat within the jurisdiction and discriminate between real hazards and misperceptions of hazards currently held in general public opinion within the jurisdiction.

EDUC - 1.3

Identify major legislation affecting the jurisdiction's hazardous materials emergency management system, including the Emergency Planning and Community Right-to-Know Act.

EDUC - 1.4

Describe the jurisdiction's hazardous materials emergency management system.

EDUC - 1.4.1

Describe the five phases of the comprehensive emergency management system (preparedness, response, recovery, mitigation and prevention).

EDUC - 1.4.2

Explain to the participants of the jurisdiction the purpose and integrated response system.

EDUC - 1.4.3

Explain the purpose and participants in the jurisdiction's prevention and mitigation system.

EDUC - 1.4.4

Describe general requirements for facility planning, safety management, and emergency response.

FACIL - 1.5

Identify the purpose and participants in the jurisdiction's hazardous materials and terrorist threat planning process.

EDUC - 1.5.1

Identify the jurisdiction's LEPC and TERC planning district and planning requirements.

EDUC - 1.5.2

Identify major steps and participants in the hazardous materials and terrorist incident planning process, to include hazards analysis, capability assessment, plan development, and plan evaluation.

EDUC - 1.5.3

Identify major components in the jurisdiction's hazardous materials and terrorist incident response plan.

EDUC - 2

Given residency in a specific jurisdiction, describe the citizen's role in the jurisdiction's hazardous materials and terrorist threat emergency management system.

EDUC - 2.1

Identify the personal and community benefits of citizen participation in the jurisdiction's hazardous materials and terrorist threat emergency management system.

EDUC - 2.2

Identify ways to participate in and contribute to the jurisdiction's hazardous materials and terrorist threat emergency management system (e.g. provide feedback, serve as resource, attend meetings, join committees).

EDUC - 2.3

Describe the citizens' role in individual and family preparedness.

EDUC - 2.4

Identify steps in conducting a personal hazards analysis, to include threats to the neighborhood..

EDUC - 2.5

Identify components of a personal and family preparedness plan.

EDUC - 2.6

Identify steps in testing and maintaining personal/family preparedness plans.

EDUC - 3

Given residency in a specific jurisdiction, identify personal actions to promote hazardous materials and terrorist threat emergency management.

EDUC - 3.1

Identify available sources of assistance and information and requirements for accessing them.

EDUC - 3.2

Develop an action plan for promoting hazardous materials and terrorist threat emergency management and personal/family preparedness.

Hazardous Materials Incident Response Curriculum Guidelines

Appendix:
Summaries of Planning Models, Guides, and Resources

Table of Contents

Plan Guide Summaries

This appendix provides content summaries of key reference documents used in the preparation of the *Hazardous Materials and Terrorist Incident Response Planning Curriculum Guidelines*. These materials include:

1. *Developing and Maintaining Emergency Operations Plans – Comprehensive Preparedness Guide 101* (FEMA CPG 101)
2. *Threat and Hazard Identification and Risk Assessment Guide – Comprehensive Preparedness Guide 201* (FEMA CPG 201)
3. *Hazardous Materials Emergency Planning Guide* (NRT-1)
4. *Technical Guidance for Hazards Analysis* (EPA/FEMA/DOT)
5. *Handbook of Chemical Hazard Analysis Procedures* (FEMA/DOT/EPA)
6. *Emergency Management Guide for Business & Industry* (FEMA 141)

More information on the planning models described in these materials is presented in the section "Planning Models," following this section below.

FEMA CPG 101

Federal Emergency Management Agency, Developing and Maintaining Emergency Operations Plans – Comprehensive Preparedness Guide 101, FEMA CPG 101, November 2010.

Comprehensive Preparedness Guide (CPG) 101 provides guidance for developing emergency operations plans. It is intended to promote a common understanding of the fundamentals of risk-informed planning and decision making, in order to help planners examine a hazard or threat and produce integrated, coordinated, and synchronized plans. The goal of CPG 101 is to assist in making the planning process routine across all phases of emergency management and for all homeland security mission areas. The Guide is intended to help planners at all levels of government in their efforts to develop and maintain viable, all-hazards, all-threats emergency plans.

The document is organized as follows:

- Chapter 1 addresses the Basics of Planning, including planning fundamentals; principles; the differences between strategic, operational, and tactical planning; different planning approaches; plan integration and plan synchronization; and common planning pitfalls.
- Chapter 2 addresses Understanding the Planning Environment for Federal, State, and local plans. This chapter discusses the National Incident Management System; the National Response Framework; Federal Emergency Plans; Emergency Operations Plan at the State, Territorial, and Tribal levels; and Emergency Operations Plans at the local level.
- Chapter 3 addresses Plan Format and Function, or Identifying the Right Plan for the Job. This chapter explains the appropriateness and functionality of

emergency operations plans at the State and local levels, optional ways to structure an emergency operations plan (including traditional formats, emergency support functions formats, and agency/department-focused formats); how to use planning templates, additional types of plans including procedural documents; and the content of basic plans, supporting annexes, and hazard/threat/incident-specific annexes.

- Chapter 4 addresses the planning process, and presents a six step planning process. Step 1 is to form a collaborative planning team. Step 2 is to understand the situation. Step 3 is to determine goals and objectives. Step 4 is plan development. Step 4 is plan preparation, review and approval. And Step 6 is plan implementation and maintenance.
- There are four appendices, including authorities and references, a list of acronyms and glossary, an emergency operations plan development guide, and suggested training (a list of recommended FEMA courses that can be taken).

FEMA CPG 201

Federal Emergency Management Agency, Threat and Hazard Identification and Risk Assessment Guide – Comprehensive Preparedness Guide 201, FEMA CPG 201, Second Edition August 2013.

The Comprehensive Preparedness Guide (CPG) 201, Second Edition provides communities additional guidance for conducting a Threat and Hazard Identification and Risk Assessment (THIRA). The First Edition of this Guide (April 2012) presented the basic steps of the THIRA process. Specifically, the First Edition described a standard process for identifying community-specific threats and hazards and setting capability targets for each core capability identified in the National Preparedness Goal as required in Presidential Policy Directive (PPD) 8: National Preparedness.

This Second Edition expands the THIRA process to include estimation of resources needed to meet the capability targets. The Second Edition also reflects other changes to the THIRA process based on stakeholder feedback, such as streamlining the number of steps to conduct a THIRA and providing additional examples. Where appropriate, this Guide highlights key changes from the First Edition of CPG 201. This Second Edition supersedes the First Edition of CPG 201.

The document is organized as follows:

- An Overview introduction, including explanations of the THIRA process, the relationship of THIRA to other risk assessments, FEMA's Core Capabilities, the National Preparedness System, whole community involvement, and updating previous THIRAs.

- Step 1: Identifying the Threats and Hazards of Concern. This chapter addresses types of threats and hazards, sources of threat and hazard information, factors for selecting threats and hazards, and step 1 outputs.
- Step 2: Give the Threats and Hazards Context. This chapter addresses context description: factors to consider, examples of context descriptions, and step 2 outputs.
- Step 3: Establishing Capability Targets. This chapter addresses impacts and desired outcomes, developing capability targets, an example capability target, and step 3 outputs.
- Step 4: Applying the Results. This chapter addresses doing a capability estimation, resource typing, and an example of a completed THIRA.

NRT-1

National Response Team, Hazardous Materials Emergency Planning Guide, NRT-1, July 2001.

This guidance is intended to help local communities prepare for potential incidents involving hazardous materials. It describes how to form a local planning team, find a team leader, identify and analyze hazards, identify existing response equipment and personnel, write a plan, and keep the plan up to date. The information can be used both by local communities developing their own plan, and by local emergency planning committees formed in accord with the "Emergency Planning and Community Right-to-Know Act of 1986."

State officials seeking to develop a state emergency plan that is closely coordinated with local plans can adapt this guidance to their purposes. Likewise, officials of chemical plants, railroad yards, and shipping and trucking companies can use the guide to coordinate their own hazardous materials emergency planning with that of the local community.

The guidance deals specifically with response to hazardous materials incidents—both at fixed facilities (manufacturing, processing, storage, and disposal) and during transportation (highways, waterways, rail, and air). Plans for responding to radiological incidents and natural emergencies such as hurricanes, floods, and earthquakes are not the focus of this guidance, although most aspects of plan development and appraisal are common to these emergencies.

The guide is intended to focus community activity on emergency preparedness and response; provide communities with information useful in organizing the planning task; furnish criteria to determine risk and to help communities decide whether they need to plan for hazardous materials incidents; help communities conduct planning that is consistent with their needs and capabilities; and provide a method for continually updating a community's emergency plan.

The document is organized as follows:

- Chapter 1: Introduction
- Chapter 2: Selecting and Organizing the Planning Team
- Chapter 3: Tasks of the Planning Team
- Chapter 4: Developing the Plan
- Chapter 5: Hazardous Materials Planning Elements
- Chapter 6: Plan Appraisal and Continuing Planning

Several appendices provide helpful information for community planning. In particular, Appendix A includes a detailed summary of Title III of SARA, and Appendix D presents criteria that can be used to assess a state or local hazardous materials emergency response preparedness program.

Technical Guidance for Hazards Analysis

U.S. Environmental Protection Agency, Federal Emergency Management Agency, and U.S. Department of Transportation, December 1987.

The purpose of this guide is to help local emergency planning committees (LEPCs) and tribal emergency response commissions (TERCs) conduct site-specific hazards analyses for airborne releases of extremely hazardous substances (EHSs), as required by Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). Although these substances may also threaten property and the environment, this guide is primarily concerned with lethal effects of airborne substances on humans.

This document represents a joint effort by EPA, FEMA, and DOT to provide coordinated and coherent technical guidance. Although the guide can be useful to all community and industry planners, it is intended especially for LEPCs and TERCs established under the provisions of SARA. The three steps of hazards analysis—hazards identification, vulnerability analysis, and risk analysis—provide a decision-making process for the LEPCs and TERCs to follow as they undertake the development of comprehensive emergency plans mandated by SARA Title III.

This document is organized as follows:

Chapter 1: Introduction and Overview

Chapter 2: Hazards Analysis: An Overview

2.1 - Hazards Identification

2.2 - Vulnerability Analysis for Airborne Extremely Hazardous Substances

2.3 - Risk Analysis

Chapter 3: Step-by-Step Procedures for Conducting a Hazards Analysis of Extremely Hazardous Substances

Chapter 4: Using the Results of a Hazards Analysis

Appendices:

Appendix A: Acronyms and Glossary of Terms

Appendix B: The Criteria Used to Identify Extremely Hazardous Substances

Appendix C: The List of Extremely Hazardous Substances

Appendix D: Additional Information on Levels of Concern

Appendix E: Sample Profile

Appendix F: Fire and Reactivity Hazards

Appendix G: Equations Used for the Estimation of Vulnerable Zones

Appendix H: General Considerations for Evacuation or In-Place Sheltering

Appendix I: Information Collecting to Evaluate Sites for Emergency Planning

Appendix J: Methods for Evaluating Hazards Used by Facilities

Appendix K: Evaluation Guide for Available Computer Applications Appendix L: Selected Bibliography

Appendix M: EPA and FEMA Regional Contacts

Handbook of Chemical Hazard Analysis Procedures

Federal Emergency Management Agency, U.S. Department of Transportation, and U.S. Environmental Protection Agency.

The *Handbook of Chemical Hazard Analysis Procedures* has several objectives, one of which is to expand *NRT-1* and the *Technical Guidance on Hazards Analysis* documents by including information for explosive, flammable, reactive, and otherwise dangerous chemicals. Although *NRT-1* was aimed at addressing planning for all types of hazardous materials, SARA Title III required local planners to focus on a specific initial list of acutely toxic chemicals (referred to as Extremely Hazardous Substances) due to their high inhalation toxicity when airborne, and this was the primary focus of the supplemental guidance document. By introducing additional methodologies on how to plan for these and other dangerous chemicals, this handbook serves as a stepping stone from *NRT-1* and the *Technical Guidance on Hazards Analysis* to a more comprehensive approach for emergency planning.

Beyond providing additional methodologies for assessing the potential impacts of hazardous materials releases, this handbook also expands the three-step hazards analysis approach (hazard identification, vulnerability analysis, and risk analysis) presented in *NRT-1* and its supplement by introducing a four-step approach involving hazard identification, consequence analysis, probability analysis, and risk analysis. In addition, it provides a tutorial on hazardous chemicals, suggestions for applying hazard

analysis results to writing and updating an emergency plan, and an expanded discussion of issues relating to sheltering-in-place (in-place protection) and evacuation.

The document is organized as follows:

- Chapter 1: Introduction
- Chapter 2: Key Properties of Chemical Substances
- Chapter 3: Actions Upon Release to the Environment
- Chapter 4: Fire Hazards of Chemical Substances
- Chapter 5: Explosion Hazards of Chemical Substances
- Chapter 6: Toxicity Hazards of Chemical Substances
- Chapter 7: Reactivity Hazards of Chemical Substances
- Chapter 8: Hazardous Material Classification Systems
- Chapter 9: Overview of the Hazard Analysis Process
- Chapter 10: Hazard Identification Guidelines
- Chapter 11: Probability Analysis Procedures
- Chapter 12: Consequence Analysis Procedures
- Chapter 13: Formulation of a Planning Basis
- Chapter 14: Use of Hazard Analysis Results in Emergency Planning
- Appendix A: A Tutorial on Fundamental Mathematical Skills
- Appendix B: Technical Basis for Consequence Analysis Procedures
- Appendix C: Overview of "Shelter-in-Place" Concepts
- Appendix D: Chemical Compatibility Chart
- Appendix E: Guide to Installation of the ARCHIE Computer Program
- Appendix F: Basis of Probability Analysis Procedures

FEMA 141

Federal Emergency Management Agency, Emergency Management Guide for Business and Industry, FEMA 141, October 1993.

This guide provides step-by-step advice on how to create and maintain a comprehensive emergency management program. It can be used by manufacturers, corporate offices, retailers, utilities, or any organization where a sizable number of people work or gather. It applies equally to businesses large or small, whether they operate from a high-rise building or an industrial complex, and whether they own, rent, or lease property.

Users of the document need not have in-depth knowledge of emergency management. All that is required is the authority to create a plan and a commitment from the chief executive officer to make emergency management part of the corporate culture.

Businesses that already have a plan can use this guide as a resource to assess and update the plan. The guide is organized as follows:

- Section 1: Four Steps in the Planning Process—how to form a planning team; how to conduct a vulnerability analysis; how to develop a plan; and how to

implement the plan. The information can be applied to virtually any type of business or industry.

- Section 2: Emergency Management Considerations—how to build such emergency management capabilities as life safety, property protection, communications, and community outreach.
- Section 3: Hazard-Specific Information—technical information about specific hazards the facility may face.
- Section 4: Information Sources—where to turn for additional information.

Planning Models

Various explanations of the planning process can be found in the literature, including those described in the *Guide for All-Hazard Emergency Operations Planning* (FEMA SLG 101); *Hazardous Materials Emergency Planning Guide* (NRT-1); *Technical Guidance for Hazards Analysis* (EPA/FEMA/DOT); *Handbook of Chemical Hazard Analysis Procedures* (FEMA/DOT/EPA); and *Emergency Management Guide for Business & Industry* (FEMA 141). These approaches to planning, which are briefly described here, incorporate the generic functional requirements of planning, although the steps and procedures may be defined somewhat differently. Jurisdictions and facilities should select and/or modify these models to best meet their unique planning needs and preferences.

FEMA CPG 101

Federal Emergency Management Agency, Developing and Maintaining Emergency Operations Plans – Comprehensive Preparedness Guide 101, FEMA CPG 101, November 2010.

Chapter 4 of this guide presents a six-step planning process.

- Step 1 is to form a collaborative planning team. This should include a core team, strategies to engage the whole community, and strategies to engage community leaders. Core groups include emergency management; law enforcement; fire services; emergency medical services (EMS); public health; hospitals and health care facilities; public works; utility operators; education; agriculture; animal control; social services; childcare, child welfare, and juvenile justice facilities (including courts); National Guard; private sector; and civic, social, faith-based, educational, professional, and advocacy organizations.
- Step 2 is to understand the situation. This includes identifying threats and hazards (including natural, technological, and human-caused hazards), assessing risk, and prioritizing risks to determine which hazards and threats merit special attention in planning.
- Step 3 is to determine goals and objectives. This includes determining operational priorities and then setting goals and objectives that support accomplishing the plan mission and operational priorities. Goals are broad, general statements that indicate the intended solutions to the problems that have been identified. Objectives are more specific and identifiable actions carried out during operations..
- Step 4 is plan development. This includes developing and analyzing courses of action and involves establishing the timeline, depicting the scenario, identifying and depicting decision points, identifying and depicting operational tasks, selecting courses of action, identifying resources, and identifying information and intelligence needs.

- Step 5 is plan preparation, review, and approval. This includes writing the plan; reviewing the written pan for its conformity to applicable regulatory requirements and Federal/state standards and requirements; assessing the plan's adequacy, feasibility, acceptability, completeness, and compliance; assessing the adequacy of evacuation support and shelter operations; assessing plans for public information and outreach; and assessing the plan's attention to individuals with access and functional needs. This step also includes strategies for approval and dissemination of the plan.
- Step 6 is plan implementation and maintenance. This includes appropriate training, exercising the plan, and strategies for reviewing, revising, and maintaining the plan.

FEMA CPG 201

Federal Emergency Management Agency, Threat and Hazard Identification and Risk Assessment Guide – Comprehensive Preparedness Guide 201, FEMA CPG 201, August 2013.

This guide presents four steps for conducting a Threat and Hazard Identification and Risk Assessment (THIRA).

- Step 1: Identifying the Threats and Hazards of Concern. This chapter addresses types of threats and hazards, sources of threat and hazard information, factors for selecting threats and hazards, and step 1 outputs.
- Step 2: Give the Threats and Hazards Context. This chapter addresses context description: factors to consider, examples of context descriptions, and step 2 outputs.
- Step 3: Establishing Capability Targets. This chapter addresses impacts and desired outcomes, developing capability targets, an example capability target, and step 3 outputs.
- Step 4: Applying the Results. This chapter addresses doing a capability estimation, resource typing, and an example of a completed THIRA.

NRT-1

National Response Team, Hazardous Materials Emergency Planning Guide, NRT-1, July 2001.

This guidance presents a comprehensive approach to hazardous materials planning. However, it is emphasized that every community must plan according to its own situation. Small communities with few planning resources, or communities with few or no threatening hazards, can choose the planning elements appropriate to their circumstances. Steps in the planning process can be summarized as follows:

1. Organizing the Planning Process

- Selecting the planning team
- Selecting the team leader
- Organizing for planning team responsibilities, including staffing, managing the planning tasks, and the use of computers

2. Review of Existing Plans

- Reviewing applicable state and local emergency plans
- Consulting with state and local agencies and volunteer organizations, regional offices of federal agencies, local industry and industrial associations, the RRT and OSC, etc.

3. Hazards Analysis

- Hazards identification
- Vulnerability analysis
- Risk analysis

4. Capability Assessment—sample questions are presented to help the planning team evaluate preparedness, prevention, and response resources and capabilities in the following three categories:

- Facility resources
- Transporter resources
- Community resources

5. Developing the Plan

- Developing or revising a hazardous materials appendix to a multi-hazard EOP
- Developing or revising a plan covering only hazardous materials
- Planning elements and plan requirements that should be considered in this phase of the process are described in detail, including the following fourteen response functions:
  - Initial Notification of Response Agencies
  - Direction and Control
  - Communication (among Responders)
  - Warning Systems and Emergency Public Notification
  - Public Information/Community Relations
  - Resource Management
  - Health and Medical
  - Response Personnel Safety
  - Personal Protection of Citizens
  - Fire and Rescue
  - Law Enforcement
  - Ongoing Incident Assessment
  - Human Services
  - Public Works

6. Plan Appraisal and Continuing Planning

- Plan review and approval

- Internal review
- External review

7. Keeping the plan up-to-date
8. Continuing planning
    - Exercises
    - Incident review
    - Training

Technical Guidance for Hazard Analysis

U.S. Environmental Protection Agency, Federal Emergency Management Agency, and U.S. Department of Transportation, December 1987.

This guidance is compatible with and recommends the same approach to hazardous materials planning as NRT-1. However, significantly more detail is presented on the hazards analysis step of the process. The hazards analysis is separated into two phases. The first phase is the initial screening of all facilities reporting Extremely Hazardous Substances (EHSs) on their premises in excess of their threshold planning quantities (TPQs). The initial screening is performed to establish priorities among reporting facilities using credible worst case assumptions. The second phase represents a reassessment by order of priority of the potential hazards posed by the reporting facilities. This is accomplished through the reevaluation of the assumptions used for the initial screening.

Both the initial screening and the reevaluation phases utilize the three basic steps of hazards analysis: hazards identification, vulnerability analysis, and risk analysis. Steps in the process are summarized as follows:

Initial Screening

- Hazards Identification
    - List facilities that have reported EHSs in the community in excess of the TPQ.
    - Contact each facility on the list for information on the EHSs present.
    - Obtain information on transportation routes of EHSs, if possible.
    - Obtain information on hazardous materials, facilities, and transportation routes (other than for those with EHSs above the TPQ) listed by SERCs (optional).
- Vulnerability Analysis
    - Estimate the vulnerable zone for screening using credible worst case assumptions.
    - Identify characteristics of human populations within the estimated vulnerable zone.
    - Identify critical facilities within the estimated vulnerable zone.
- Risk Analysis

- Collect information obtained in hazards identification and vulnerability analysis.
- Make rough estimate of risks based on the likelihood of a release and severity of consequences.
- Identify those facilities with higher priority due to the estimated risks they pose.

Planning for Facilities by Priority

- Hazards Identification
  - Contact each facility on the list and other expert sources for additional information.
  - Obtain additional information on typical transportation conditions, if possible.
- Vulnerability Analysis
  - Reestimate the vulnerable zone using reevaluated assumptions from the facility and other expert sources.
  - Identify characteristics of human populations within the estimated vulnerable zone.
  - Identify critical facilities within the estimated vulnerable zone.
  - Risk Analysis Collect all information obtained in hazards identification and vulnerability analysis in a table.
  - Obtain additional information on community and facility safeguards, response capabilities, and accident records.
  - Make a judgment of the probability of release and severity of consequences.
  - Organize all information (from A, B, and C) in a matrix format.
  - Rank risks.
- Develop or revise emergency plans for higher priority facilities.

Handbook of Chemical Hazard Analysis Procedures

Federal Emergency Management Agency, U.S. Department of Transportation, and U.S. Environmental Protection Agency.

This guide presents four basic steps for conducting a hazard analysis, and a related fifth step that takes advantage of the knowledge gained during the effort to develop a comprehensive emergency plan. These steps include:

- **Hazard Identification**—location, identification, and characterization of potential spill sources and accident sites in the jurisdiction or locality of concern. This step essentially concludes with the identification and/or postulation of fundamental accident scenarios requiring further consideration and analysis. Results from the probability analysis which follows can often help in further refining these scenarios. Methods discussed include:
  - Enforcement of right-to-know laws
  - Use of fire department and building inspection records

- Industry questionnaires
- Meetings with business organizations and trade groups
- Meetings with individual business personnel
- Queries of rail, marine, and pipeline transportation companies
- Truck traffic surveys
- Use of permit records
- Use of the "Yellow Pages"
- Access to detailed chemical property data and hazard information

- **Probability Analysis**—evaluation of the likelihood of individual accident scenarios. This step permits examination and/or prioritization of potential accident scenarios in terms of their probability of occurrence. Categories of activities discussed include:
  - Bulk transportation by highway
  - Bulk transportation by rail
  - Bulk transportation by barge or other marine vessel
  - Transportation by pipeline
  - Bulk storage, processing, or handling at fixed facilities
  - Transportation of packaged hazardous materials
  - Transportation by air
- **Consequence Analysis**—evaluation of the consequences and impacts associated with the occurrence of postulated accident scenarios. This step provides an understanding of the nature and outcome of an accident and permits examination and/or prioritization of scenarios in terms of their potential impact on people and property. The Automated Resource for Chemical Hazard Incident Evaluation (ARCHIE) computer program and a set of hazard assessment procedures and models are discussed.
- **Risk Analysis**—combination of results from the accident probability and consequence analysis efforts to provide a measure of overall risk associated with the specific activity or activities. The effort permits examination and/or prioritization of scenarios in terms of overall risk. Steps include:
  - Definition of annual accident probability categories
  - Definition of accident severity categories
  - Application of screening guidelines
- **Formulation of a Planning Basis**—use of the results of the above activities during actual development and preparation of an emergency plan. The material includes discussion of 43 separate topics in 13 subject areas, as follows:
  - Notification
  - Command and Communications
  - Evacuation
  - Fire response
  - Health Care
  - Personal Protection
  - Public Relations
  - Spill Containment and Cleanup

- Spill Documentation
- Spill Monitoring
- Post-Spill Recovery
- Training
- Waste Disposal

FEMA 141

Federal Emergency Management Agency, *Emergency Management Guide for Business & Industry*, FEMA 141, October 1993.

This document emphasizes the emergency planning and management needs of business and industry. Four steps are identified in the planning process, as follows:

- Establish a Planning Team
  - Form the team
  - Establish authority
  - Issue a mission statement
  - Establish a schedule and budget
- Analyze Capabilities and Hazards: Where do you stand right now?
  - Review internal plans and policies
  - Meet with outside groups
  - Identify codes and regulations
  - Identify critical products, services, and operations
  - Identify internal resources and capabilities
  - Identify external resources
  - Do an insurance review
- Conduct a vulnerability analysis
  - List potential emergencies and estimate probability
  - Assess the potential human impact
  - Assess the potential property impact
  - Assess the potential business impact
  - Assess internal and external resources
  - Add the columns
- Develop the Plan
  - Identify challenges and prioritize activities
  - Write the plan
  - Establish a training schedule
  - Coordinate with outside organizations
  - Maintain contact with other corporate offices
  - Review, conduct training, and revise
  - Seek final approval
  - Distribute the plan
- Implement the Plan

- Integrate the plan into company operations
- Conduct training (including exercises and drills)
- Evaluate and modify the plan

The guide also identifies planning considerations that are unique to hazardous materials, as well as core operational considerations of emergency management, in the following categories:

- Direction and Control
- Communications
- Life Safety
- Property Protection
- Community Outreach
- Recovery and Restoration
- Administration and Logistics

Terrorist Incident Response Planning Models

Terrorism and weapons of mass destruction (WMD) are the subject of much-needed attention, both in the news media and by government officials at all levels of emergency response. WMDs are "weapons or devices that are intended, or have the capability, to cause death or serious bodily injury to a significant number of people, through the release, dissemination, or impact of toxic poisonous chemicals; disease organisms; or radiation or radioactivity." While major metropolitan areas across the United States have done WMD planning since the mid-1990s, when the Nunn-Lugar-Domenici provision of the National Defense Authorization Act of 1997 legislation first provided funding for the planning, the events of September 11, 2001 have released a torrent of money to combat terrorism. Some communities have found it easier to use this money to buy specialized equipment rather than to spend the money on intensive planning efforts required at the local level. "It's easier to show the County Commissioners new decontamination equipment than convince them that the same amount of money spent on a WMD plan is well worth the investment," said one county planner.

Local jurisdictions know they must plan how to respond themselves because multiple strikes in various locations may make it impossible for neighboring communities to assist. State and federal response resources are likely to be hours, if not days, away. WMD event-specific factors include:

- planning for more extensive and longer-term mutual-aid operations
- planning more extensive casualty-care operations
- preparing to fit local response operations into a larger federal response environment than would occur in hazardous materials incidents
- preparing for more complex technical operations in the face of more esoteric and unusual chemical and biological threats
- preparing emergency communications systems to accommodate a much larger volume of traffic and greater number of users
- planning for more extensive notification requirements and more far-reaching resource request coordination
- preparing for sustaining critical government operations in the face of infrastructure damage akin to that experienced in large disasters
- preparing for managing public communications in an environment of high public concern and hysteria

Communities and states have already completed much of the first steps toward a WMD response plan by going through the State Domestic Preparedness Equipment Program for the Office of Domestic Preparedness (ODP). Each community followed a needs assessment process that indicated how terrorism funds could best be applied against a domestic preparedness strategy for the entire state. The steps are listed below:

- Step 1 – Identification and Coordination of Jurisdictions
- Step 2 – Risk Assessment Process

- Step 3 – Capabilities and Needs Assessment
- Step 4 – Jurisdiction Prioritization Matrix
- Step 5 – Three-year Projection Forms
- Step 6 – Additional Training Information
- Step 7 – Emergency Response Team Survey
- Step 8 – Recommendations for State and Local Response to WMD Terrorism Incidents
- Step 9 – Statewide Domestic Preparedness Strategy

Planning for Response to Terrorist Incidents

The process for planning for terrorist incidents is evolving. Two basic approaches to WMD planning are commonly used today.

The first approach is an all hazards, functional planning approach that often uses the existing Community Emergency Operations Plan (EOP) as the guiding plan, with a separate annex to anticipate and exercise unique responses for the requirements of a terrorist incident. In this approach, the threat of a terrorist incident is treated as a subset of the many other hazards that a community must prepare for.

The second approach is terrorist threat specific, and treats the threat of a terrorist incident as a separate entity requiring unique and separate planning and preparation for response. A prime example is the Metropolitan Medical Strike Team Model. Terrorist threat specific planning can provide greater flexibility in terms of methods for assessing worst-case scenarios and allows closer focus on terrorist threats, but also can be more resource intensive and can require additional response planning teams and documentation duplicative of other response planning occurring in the jurisdiction.

This appendix provides a brief discussion of both approaches, followed by a response resource guide describing many of the additional response resources available to local response to terrorist incidents, to be considered in response planning.

All-Hazards, Functional Planning Approach: Community EOP with Terrorism Annex

The first approach is that the roles, responsibilities, and principles of planning for WMD incidents are very similar at the local level to those for hazardous materials incidents and other emergencies that affect communities on a regular basis. A comprehensive Community EOP that has been thoroughly reviewed, is well understood by all response and support agencies, and that has been exercised completely will work whether an incident is a hazardous materials incident or a WMD attack.

Federal Response Plan

The all-hazard approach is mirrored in the Federal Response Plan (FRP), which describes the mechanisms and structures that the federal government will use to mobilize resources and conduct activities to assist State and local response efforts. The FRP uses a functional approach to group the types of federal assistance that a state is most likely to need 15 Emergency Support Functions (ESF) or more. The FRP describes

how each of the signatory agencies contributes to the response efforts. It was developed under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended).

The Terrorism Annex to the FRP describes the policies, situation, planning assumptions, concept of operations, and responsibilities for handling a WMD incident. Many states and communities use this same approach when planning how to tailor their own response to a terrorist event.

The following planning assumptions have been drawn from the Terrorism Incident Annex to the Federal Response Plan:

- No single agency at the local, Tribal, State, Federal, or private-sector level possesses the authority and expertise to act unilaterally on many difficult issues that may arise in response to a threat or act of terrorism, particularly if WMD are involved.
- An act of terrorism, particularly an act directed against a large population center within the United States involving WMD, may produce major consequences that would overwhelm the capabilities of many local and State governments almost immediately.
- Major consequences involving WMD may overwhelm existing Federal capabilities as well, particularly if multiple locations are affected.
- Local, Tribal, State, and Federal responders will define working perimeters that may overlap. Perimeters may be used to control access to the area, target public information messages, assign operational sectors among responding organizations, and assess potential effects on the population and the environment. Control of these perimeters may be enforced by different authorities, which will impede the overall response if adequate coordination is not established.
- If appropriate personal protective equipment is not available, entry into a contaminated area (i.e., a hot zone) may be delayed until the material dissipates to levels that are safe for emergency response personnel. Responders should be prepared for secondary devices.
- Operations may involve geographic areas in a single State or multiple States, involving responsible FBI Field Offices and Regional Offices, as appropriate. The Federal Bureau of Investigation (FBI) and FEMA will establish coordination relationships as appropriate, based on the geographic areas involved. Tribes are to be treated the same.

- Operations may involve geographic areas that spread across U.S. boundaries. The Department of State is responsible for coordination with foreign governments.
- The FRP may be implemented concurrently with the:
  - National Plan for Telecommunications Support in Non-Wartime Emergencies, which provides a basis for ESF #2
  - National Oil and Hazardous Substances Pollution Contingency Plan, known as the National Contingency Plan (NCP), which provides the basis for ESF #10
  - Federal Radiological Emergency Response Plan (FRERP), which details the Federal response to a peacetime radiological emergency.
  - Presidential Decision Directive 39 (PDD-39) and PDD-62 that set forth U.S. counterterrorism policy

The FRP Terrorism Incident Annex (called for in PDD-39) describes the concept of operations for a unified response to a terrorism incident involving two or more of the following plans: the FRP, the Federal Bureau of Investigation (FBI) Weapons of Mass Destruction (WMD) Incident Contingency Plan, and the Department of Health and Human Services (HHS) Health and Medical Services Support Plan for the Federal Response to Acts of Chemical/Biological Terrorism (discussed in the next section).

The Community Emergency Operations Plan (EOP)

Many community EOPs, which are developed using this same approach, consist of a basic plan, functional annexes, and hazard-specific appendices. These are supplemented, as needed, by standard operating procedures (SOPs) and checklists for implementation of the plan.

Federal agencies, including the United States Fire Administration (USFA) and the Environmental Protection Agency (EPA), remind local LEPCs and TERCs to be sure they update their emergency plans before adding information about response to a WMD incident.

FEMA's Guide for All-Hazard Emergency Operations Planning and the National Response Team's Hazardous Materials Emergency Planning Guide (NRT-1) state that the decision to develop a hazard-specific appendix (including WMD-specific) should be based on special planning requirements not common to other hazards addressed in the functional annex, and on regulatory considerations that may require extensive, detailed planning that is inappropriate for inclusion in the annex.

Terrorism Incident Annex

According to the latest FEMA Guidance for All-Hazard Emergency Operations Planning, the situation section for a Terrorism Incident Annex (TIA) should discuss what constitutes a potential or actual WMD incident. It should present a concise, clear, and accurate overview of potential events and discuss a general concept of operations for response. Any information already included in the EOP need not be duplicated in the TIA. The situation overview should include as much information as possible that is unique to WMD response actions, including maps, environment, population, and provisions for working with Federal crisis and consequence management agencies.

Assumptions for working with levels beyond the county or local jurisdiction should include:

- The first responder or health and medical personnel will, in most cases, initially detect and evaluate the potential or actual incident, assess casualties (if any), and determine whether assistance is required.
- If so, State support will be requested and provided. This assessment will be based on warning or notification of a WMD incident that may be received from law enforcement, emergency response agencies, or the public.
- The incident may require Federal support. To ensure that there is one overall Lead Federal Agency (LFA), the Federal Emergency Management Agency (FEMA) is authorized to support the Department of Justice (DOJ) as delegated to the FBI until the Attorney General transfers the overall LFA role to FEMA.
- In addition, FEMA is designated as the lead agency for consequence management within the United States and its territories. FEMA retains authority and responsibility to act as the lead agency for consequence management throughout the Federal response. In this capacity, FEMA will coordinate Federal assistance requested through State authorities using normal FRP mechanisms.
- Federal response will include experts in the identification, containment, and recovery of WMD (chemical, biological, or nuclear/radiological). Federal consequence management response will entail the involvement of FEMA, additional FRP departments and agencies, and the American Red Cross, as required.

In addition to the documents discussed above, information to assist with this planning can be found in the following FEMA documents:

- Introduction to State, Tribal, and Local EOP Planning Guidance
    - The purpose of this guidance is to help state and local governments fine-tune their EOPs and address critical planning considerations to include interstate and intrastate mutual aid agreements, resource typing, resource standards, protection of critical infrastructure, inventory of critical response equipment and teams, continuity of operations, and family and community preparedness.
- Managing the Emergency Consequences of Terrorist Incidents – Interim Guidelines
    - This is an interim planning guide that is designed to provide state and local emergency management planners with a framework for developing supplemental emergency operations plans that address the consequences of a terrorist attack involving weapons of mass destruction. It provides a consistent planning approach that encourages the efficient integration of State, local, and Federal terrorism response activities and provides the most current information regarding planning and operational challenges faced by communities that have dealt with terrorist events.
- Tool Kit for Managing the Emergency Consequences of Terrorist Incidents
    - This tool kit provides forms, checklists and charts to facilitate State and local planning for a terrorist incident. It includes a capability assessment survey, a checklist of functional responsibilities and emergency public information activities as well as tools for direction and control, managing resources, and disseminating warnings.
- CONPLAN – Federal Interagency Domestic Terrorism Concept of Operations Plan
    - The CONPLAN provides overall guidance to Federal, State and local agencies concerning how the federal government would respond to a potential or actual terrorist threat or incident that occurs in the United States, particularly one involving WMD.
- Hazardous Materials Planning Guide 2001 Update

- This 2001 update of the National Response Team's Hazardous Materials Emergency Planning Guide (NRT-1) provides guidance on developing state and local emergency response plans for hazardous materials events. It can be found under "New Publications." The National Response Team is made up of 16 Federal agencies, each with responsibilities and expertise in emergency response to hazardous chemical releases, oil discharges, and other toxic spills.

- Comprehensive Hazardous Materials Emergency Response – Capability Assessment Program (CHER-CAP)
  - CHER-CAP is a comprehensive preparedness program offered by FEMA to local communities and Tribal governments to address hazardous materials incidents. It is designed to help communities better understand hazardous materials risks, identify planning deficiencies, update plans, train first responders and identify systemic strengths and needed improvements.
- CSEPP (Chemical Stockpile Emergency Preparedness Program) Planning Guidance
  - The primary strategic document providing State, local, and Army installation planners with guidelines for formulating and coordinating emergency plans and the associated emergency response systems for chemical events that may occur at the chemical agent stockpile storage locations in the continental United States.

Terrorist Threat-Specific Planning Approach: The Metropolitan Medical Strike Team Model

The second approach is the Metropolitan Medical Strike Team Model (MMST). The first MMSTs were established as prototypes in Arlington County in the metropolitan area of Washington, DC and in preparation for the 1996 Centennial Olympic Games in Atlanta. More than 120 cities and metropolitan areas have used the funds provided by the Department of Health and Human Services (DHHS) to plan and equip systems with specially trained first responders, special pharmaceuticals and decontamination equipment, on-site health care, and enhanced emergency medical transportation and emergency room capabilities.

This approach was developed from the Domestic Preparedness Program of the Nunn-Lugar-Domenici legislation, which also called for the Army's Chemical and Biological Defense Command (CBD-COM) to design a train-the-trainer program to build on the existing knowledge and capabilities of local first responders—fire, law enforcement, and

medical personnel and hazmat technicians—who would face a WMD incident during the first hours.

MMSTs are designed to provide initial, on-site response and provide for transportation of decontaminated patients to hospital emergency rooms in the event of a terrorist attack. They are also capable of providing medical and mental health care to victims of such attacks and moving victims to other regions if local health care resources are overrun. MMSTs consist of fire service, EMS, physicians, nurses, and law enforcement officials. The team is divided into three groups that rotate assignments. Therefore, one task force is always on duty, the second is on standby, and the third is off.

When an accident involving hazardous materials occurs, whether transportation or fixed-facility, parameters exist. Terrorism exists without parameters. While those who use the MMST model acknowledge that a nuclear or chemical WMD event is, inherently, a hazardous materials incident, their approach states that "there are significant differences between the two types of incident that influence a civil jurisdiction's response planning, organization, training, equipment, operational procedures, and coordination requirements."

An introduction to San Jose's Response Plan for Terrorist Incidents involving WMD Nuclear, Biological, or Chemical Agents (NBC) states that such a terrorist incident may be characterized by:

- The use of WMD designed to inflict mass casualties
- The high lethality of biological or chemical agents
- The extremely toxic environment resulting from NBC/WMD
- The initial ambiguity in determining what type of NBC weapon or agent is involved
- The potential for a combination of weapons/agents each presenting different response requirements, i.e., explosives and chemical agents or simultaneous explosives, chemical agents, and radioactive material dispersal
- The narrow window-of-response time to administer lifesaving antidotes for chemical agents and antibiotics for biological agents
- The need for immediate medical treatment for mass casualties
- The need for immediately available specialized pharmaceuticals
- The need for specialized WMD/NBC detection equipment
- The need for a timely, efficient, and effective mass decontamination system

- The need for an organized, trained, and equipped health and medical services emergency response unit to immediately augment the local hazardous materials/EMS response
- The need for pre-event coordination with hospitals and medical treatment centers to establish medical treatment protocols, stock appropriate pharmaceuticals, and determine treatment procedure requirements
- The need to accomplish advance planning and coordination to respond to each of the needs identified above

Following is the MMST Model Table of Contents, showing how the plan is organized:

- Introduction
- Mission, Concept of Operations, Organization, and NDMS Interface
- Training (DRAFT)
- NBC Use Indicators and Response Concerns for First Responders
- Operations Management Guide:
  - Describes each of the four phases in which NBC terrorism preparedness and response activities are categorized: awareness, alert, warning, and response
  - Lists the indications of a Terrorist Incident involving NBC/WMD and outlines the operational considerations
  - Describes coordination of response efforts and use of ICS for initial command and control, and expansion of ICS to unified command
- Operational Checklists
- Bioterrorism Response Plan: Recognition and Evaluation
- Bioterrorism Response Plan: Casualty Management Strategy
- Bioterrorism Response Plan: Site Management Strategy
- Bioterrorism Response Plan: Site Management Strategy Table
- Bioterrorism Response Plan: Non-Site Management Strategy
- Mass Fatality Management
- Recovery Plan
- Supplemental Planning Guide - Health & Medical Services

- Supplemental Planning Guide - Law Enforcement
- Appendix A - Incident Exposure Report
- Appendix B - Patient Decontamination Procedure
- Appendix C - Technical Decontamination Procedure
- Appendix D - Emergency Decontamination Procedure
- Appendix E - Equipment Cache Requirements
- Appendix F - Pharmaceutical Support.

Additional Planning Resources

- DHS CFATS Program (6 CCR 27) has requirements for facility plans with the relation to security for Terrorism. Research is needed to identify the requirements for chemical facility plans.
- EPCRA § 303 requires elements of a comprehensive emergency response plan.
- EPCRA § 304 identifies emergency notification to the community
- EPCRA § 305 addresses Emergency training, review of emergency systems and reporting requirements. Reporting requirements provide data for threat assessment
- EPCRA § 311 addresses Material Safety Data Sheet (now Safety Data Sheets)
- EPCRA § 312 addresses Emergency and hazardous chemical inventory forms
- EPCRA § 313 addresses Toxic Chemical release forms…Toxic Release Inventory (TRI) identifies the need for Facility Emergency Response Plans and facility hazard assessments
- EPA 40 CFR part 68 is the Risk Management Program (RMP) requirements. This addresses regulated chemicals which require an assessment of a catastrophic release to the community.
- Five required elements:
- A hazard assessment
- A management system
- A prevention program
- An emergency response program
- A risk management plan that describes the above elements
- The use of EPAs CAMEO, ALOHA and MARRAPLOT to conduct threat assessments for chemicals.
- EPA has a data base with the listing of TRI and RMP facilities in the United States.
- EPA Safety Performance Indicators Program: www.oecd.org/ehs or http: //oecdsaftyindicators.org

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