



# A Guide to Emergency Action Planning



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**This guide is intended to be consistent with all existing OSHA standards; therefore, if an area is considered by the reader to be inconsistent with a standard, then the OSHA standard must be followed.**

To obtain additional copies of this guide, or if you have questions about North Carolina occupational safety and health standards or rules, please contact:

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Additional sources of information are listed on the inside back cover of this guide.

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The projected cost of the NCDOL OSH program for federal fiscal year 2008–2009 is \$17,042,662. Federal funding provides approximately 30 percent (\$4,090,400) of this total.



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# Foreword

Planning to minimize all workplace hazards is not easy. All employers face the possibility of emergencies— workplace fires, hazardous chemical releases, floods and explosions. There are many other emergencies to which workers are susceptible. Having an emergency action plan that addresses unforeseen disasters is one of the best ways an employer can protect the workplace from fatalities. *A Guide to Emergency Action Planning* can help employers plan for the emergencies their businesses are most likely to encounter. Having a plan can save lives when an emergency strikes.

In North Carolina, DOL inspectors enforce the federal Occupational Safety and Health Act through a state plan approved by the U.S. Department of Labor. The Occupational Safety and Health Division of the N.C. Department of Labor offers many educational programs to the public and produces publications, including this guide, to help inform people about their rights and responsibilities regarding occupational safety and health.

When looking through this guide, please remember the DOL mission is greater than just enforcement of regulations. An equally important goal is to help people find ways to create safe workplaces. This booklet, like the other educational materials produced by the N.C. Department of Labor, can help.

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# Introduction

Emergencies can come from many causes, including chemical, biological, bioterrorism, radiation, personal protective equipment, training and education, and equipment. Natural events such as tornadoes or hurricanes may also lead to emergency situations.

What does your employer need to do to prepare?

Does your employer have the framework to survive one of these emergencies?

This guide aids employers by highlighting the requirements of many OSHA standards that require some action by employers based on or related to emergency planning and emergency situations. This guide focuses on general industry environments. Other industries such as shipyards, maritime, longshoring, construction and agriculture also have some requirements. Some of these requirements refer back to the general industry standards. Read the first section of this guide to determine if your employer must create an OSHA emergency action plan. The next section contains specific standards that require some action for employers within their scope. The last part of this guide explains how NCDOL is prepared for and will interact with other agencies during an emergency response.

NCDOL has resources available to employers to assist them in their preparations. Publications, in addition to this one, can be found at [www.nclabor.com/pubs.htm](http://www.nclabor.com/pubs.htm).

# 1

## Emergency Action Plan

Do I need to develop an emergency action plan (EAP)? Answer the following questions to determine if your company needs to develop an EAP in accordance with 29 CFR 1910.38. The checklist does not alert you to other OSHA standards that may be associated with your emergency plan or to the additional OSHA standards that apply to your facility.

QUESTION	YES	NO
Are fire extinguishers provided in the workplace?		
Are the fire extinguishers intended for employee use?		
Will any of your employees be required to evacuate the workplace?		
<b>If you answered “no” to either of the first two or “yes” to all three questions then you are required to develop an EAP. Otherwise, you should continue with the questions in the table below.</b>		

QUESTION	YES	NO
Does your facility use a total flooding extinguishing system that provides any one of the following design concentrations: <ul style="list-style-type: none"> <li>• 4 percent or greater of Halon 1211?</li> <li>• 4 percent or greater of carbon dioxide?</li> <li>• 10 percent or greater of Halon 1301, or concentrations exceeding 7 percent when egress from an area cannot be accomplished in one minute?</li> </ul>		
Does your facility use a fire detection system with alarms or devices that are delayed by more than 30 seconds for reasons other than a total flooding extinguishing system listed above?		
Are you required to comply with 29 CFR 1910.119, <i>Process Safety Management</i> ?		
Are you required to comply with 29 CFR 1910.272, <i>Grain Handling Facilities</i> ?		
Are you required to comply with 29 CFR 1910.1047, <i>Ethylene Oxide</i> ?		
Are you required to comply with 29 CFR 1910.1050, <i>Methylenedianiline</i> ?		
Are you required to comply with 29 CFR 1910.1051, <i>1,3-Butadiene</i> ?		
Do you plan to evacuate all of your employees and to rely on an outside party to provide emergency response to a hazardous substance release?  <b>Note:</b> if a hazardous substance emergency could occur at your facility and you plan to have any of your employees participate in the emergency response, you are required to have an emergency response plan consistent with 29 CFR 1910.120(q), <i>Hazardous Waste Operations and Emergency Response</i> .		
<b>If you answered “YES” to any one of the questions above, you are required to develop an emergency action plan in compliance with the Emergency Action Plan standard (29 CFR 1910.38).</b>		

If you determined you are required to develop an EAP in accordance with 1910.38, the appendix to Subpart E has helpful guidance that is restated below. The appendix to Subpart E serves as a nonmandatory guideline to assist employers in complying with the appropriate requirements of the subpart. Additionally, NCDOL has many sample programs for standards that require an employer to have a written program. The programs are available as Microsoft Word documents or Adobe Acrobat documents at [www.nclabor.com/osha/consult/sample\\_programs.htm](http://www.nclabor.com/osha/consult/sample_programs.htm).

## *Appendix to Subpart E*

### 1910.38 Employee emergency plans

1. "Emergency action plan elements." The emergency action plan should address emergencies that the employer may reasonably expect in the workplace. Examples are: fire; toxic chemical releases; hurricanes; tornadoes; blizzards; floods; and others. The elements of the emergency action plan presented in paragraph 1910.38(c) can be supplemented by the following to more effectively achieve employee safety and health in an emergency. The employer should list in detail the procedures to be taken by those employees who have been selected to remain behind to care for essential plant operations until their evacuation becomes absolutely necessary. Essential plant operations may include the monitoring of plant power supplies, water supplies, and other essential services which cannot be shut down for every emergency alarm. Essential plant operations may also include chemical or manufacturing processes which must be shut down in stages or steps where certain employees must be present to assure that safe shut down procedures are completed.

The use of floor plans or workplace maps which clearly show the emergency escape routes should be included in the emergency action plan. Color coding will aid employees in determining their route assignments.

The employer should also develop and explain in detail what rescue and medical first aid duties are to be performed and by whom. All employees are to be told what actions they are to take in these emergency situations that the employer anticipates may occur in the workplace.

2. "Emergency evacuation." At the time of an emergency, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In some cases where the emergency is very grave, total and immediate evacuation of all employees is necessary. In other emergencies, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. In some cases, only those employees in the immediate area of the fire may be expected to evacuate or move to a safe area such as when a local application fire suppression system discharge employee alarm is sounded. Employees must be sure that they know what is expected of them in all such emergency possibilities which have been planned in order to provide assurance of their safety from fire or other emergency.

The designation of refuge or safe areas for evacuation should be determined and identified in the plan. In a building divided into fire zones by fire walls, the refuge area may still be within the same building but in a different zone from where the emergency occurs.

Exterior refuge or safe areas may include parking lots, open fields or streets which are located away from the site of the emergency and which provide sufficient space to accommodate the employees. Employees should be instructed to move away from the exit discharge doors of the building, and to avoid congregating close to the building where they may hamper emergency operations.

3. "Emergency action plan training." The employer should assure that an adequate number of employees are available at all times during working hours to act as evacuation wardens so that employees can be swiftly moved from the danger location to the safe areas. Generally, one warden for each twenty employees in the workplace should be able to provide adequate guidance and instruction at the time of a fire emergency. The employees selected or who volunteer to serve as wardens should be trained in the complete workplace layout and the various alternative escape routes from the workplace. All wardens and fellow employees should be made aware of handicapped employees who may need extra assistance, such as using the buddy system, and of hazardous areas to be avoided during emergencies. Before leaving, wardens should check rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the area.

After the desired degree of evacuation is completed, the wardens should be able to account for or otherwise verify that all employees are in the safe areas.

In buildings with several places of employment, employers are encouraged to coordinate their plans with the other employers in the building. A building-wide or standardized plan for the whole building is acceptable provided that the employers inform their respective employees of their duties and responsibilities under the plan. The standardized plan need not be kept by each employer in the multi-employer building, provided there is an accessible location within the building where the plan can be reviewed by affected employees. When multi-employer building-wide plans are not feasible, employers should coordinate their plans with the other employers within the building to assure that conflicts and confusion are avoided during times of emergencies. In multi-story buildings where more than one employer is on a single floor, it is essential that these employers coordinate their plans with each other to avoid conflicts and confusion.

4. "Fire prevention housekeeping." The standard calls for the control of accumulations of flammable and combustible waste materials.

It is the intent of this standard to assure that hazardous accumulations of combustible waste materials are controlled so that a fast developing fire, rapid spread of toxic smoke, or an explosion will not occur. This does not necessarily mean that each room has to be swept each day. Employers and employees should be aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses. Certainly oil soaked rags have to be treated differently than general paper trash in office areas. However, large accumulations of waste paper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this standard is concerned. Such combustible materials may be easily ignited by matches, welder's sparks, cigarettes and similar low level energy ignition sources.

5. "Maintenance of equipment under the fire prevention plan." Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through periodic inspection or testing, that these controls are operable. Manufacturers' recommendations should be followed to assure proper maintenance procedures.

In summary,

Emergency action plans are required by the following standards:

1910.119(n): Process Safety

1910.160(c)(1): Fixed Extinguishing Systems, General

1910.272(d): Grain Handling

Both emergency action plans and fire prevention plans are required by these standards:

1910.1047(h)(1)(iii): Ethylene Oxide

1910.1050(d)(1)(iii): Methylenedianiline

1910.1051(j): 1,3-Butadiene

Certain sections of the general industry standards allow an employer to establish and implement an emergency action plan and/or a fire prevention plan as an alternative to meeting the requirements of other standards, but stipulate that the plans must comply with the relevant paragraph of 1910.38 and 1910.39 respectively.

For instance, 1910.157 requires all employers to select, distribute and maintain portable fire extinguishers for employee use and to educate all employees annually in the use of extinguishers and the dangers associated with fighting an incipient stage fire. However, 1910.157(a) and (b) provide employers an exemption from most or all of the requirements of this section by meeting specific alternative requirements, one of which is the establishment of an emergency action plan and fire prevention plan that comply with 1910.38 and 1910.39. If an employer fails to have these plans, or fails to meet any of the requirements of 1910.38 or 1910.39, then the employer has not met the requirements for exemption and must therefore comply with 1910.157(c) through (g).

Also, 1910.120(l)(1), (p)(8)(1) and (q)(1) require affected employers to develop emergency response plans but allow an exemption to employers who will evacuate their employees from the danger area, not allow employees to assist in the handling of an emergency, and have an emergency action plan that complies with 1910.38. Again, an employer who does not meet all of the elements of 1910.38 does not meet the requirements for exemption and must then have an emergency response plan instead.

Another standard, 1910.164(e)(3), prohibits the delay of alarms or devices initiated by the actuation of a fire detector for greater than 30 seconds unless such delay is necessary for the immediate safety of employees. If the delay exemption is used, the employer must have an emergency action plan meeting the requirements of 1910.38. Failure to meet even one of the requirements of 1910.38 means failure to meet the delay exemption, leaving the prohibition in effect.

## Specific Standards and Their Requirements

Several OSHA standards explicitly require employers to have emergency action plans for their workplaces. Emergency preparedness is a well-known concept in protecting workers' safety and health. To help employers, safety and health professionals, training directors, and others, the OSHA requirements for emergencies are compiled and summarized in this industry guide.

This publication provides a generic, nonexhaustive overview of OSHA standards for emergencies. It is not intended to alter or determine compliance responsibilities in OSHA standards or the *Occupational Safety and Health Act of 1970*. Please review the current OSHA standards applicable to your work operations to ensure your compliance.

**Note:** *The Americans with Disabilities Act (ADA)* imposes specific obligations on employers relative to employment of individuals with disabilities. The U.S. Equal Employment Opportunity Commission's Web site provides employer resources for addressing ADA requirements in private workplaces, including "Enforcement Guidance on Reasonable Accommodations." The Job Accommodations Network publication *Emergency Evacuation Procedures for Employees With Disabilities* provides planning information and resources on emergency procedures for employees with disabilities.

### Background

The U.S. Congress passed the *Superfund Amendments and Reauthorization Act (SARA)* in 1986. This legislation included the *Emergency Planning and Community Right to Know Act (Title III)*, which laid the foundation for communities to prepare for and respond to emergency incidents involving hazardous substances. Title III also requires employers to assist in planning and to provide accurate information about the hazardous substances or chemicals they control.

In 1989, OSHA issued a final rule on Hazardous Waste Operations and Emergency Response (HAZWOPER) to work hand-in-hand with SARA Title III. OSHA's rule, 29 CFR 1910.120, establishes safety and health requirements for employers for the protection of employees and requires the development of an emergency response plan. This plan is to be integrated with local, state and federal agency plans for local community emergency preparedness.

A second significant emergency planning law was enacted in 1990. The *Clean Air Act Amendments (CAAA)* gave the Environmental Protection Agency (EPA) and OSHA more responsibilities for preventing major chemical emergencies. At the same time, OSHA was developing the Process Safety Management (PSM) of Highly Hazardous Chemicals standard (29 CFR 1910.119) and published it as a final rule in February 1992. The standard requires employers to establish a PSM program to prevent major chemical workplace emergencies and to implement an emergency action plan.

Please note that the EPA has the Risk Management Program (RMP) and Community Right-to-Know regulations that address releases of dangerous chemicals. Information is available on the EPA's Web site at [www.epa.gov/epaoswer/hotline/rmp.htm](http://www.epa.gov/epaoswer/hotline/rmp.htm). North Carolina has its own Right to Know Act that requires employers with over 55 gallons or 500 pounds of flammable chemical to give a report to the local fire department. Employers within the jurisdiction of the EPA will want to review 40 CFR 300, the National Oil and Hazardous Substances Pollution Contingency Plan ([www.access.gpo.gov/nara/cfr/waisidx\\_00/40cfr300\\_00.html](http://www.access.gpo.gov/nara/cfr/waisidx_00/40cfr300_00.html)).

This section outlines the emergency-related requirements as follows:

- **General Requirements for Workplaces**

These standards are generally required of all workplaces within the industry. Every employer must comply with these requirements or the parallel state plan requirements, except where specifically exempted.

- **Additional Requirements for Workplaces Referenced in Other Requirements**

The standards listed in this section are those that are applicable to the workplace when employer compliance is required by another OSHA standard. For example, a grain handling facility employer is required by the grain handling facility standard (1910.272) to implement an emergency action plan meeting the requirements of 1910.38.

- **Additional Requirements for Specific Workplaces/Operations**

The standards that cover specific workplaces, operations or processes are listed in this section. It is important to note that 29 CFR 1910.5(c) provides that these specific standards prevail over any other general standard that

might otherwise be applicable to the same condition, practice, means, method, operation or process. The general standards do apply, however, to the extent that none of the particular standards are applicable.

- ***Requirements That Support Emergency Response and Preparedness***

In addition to the emergency requirements contained in the sections above, this section includes standards that are likely to be applicable in an emergency situation. In any chemical-related emergency, for example, the personal protective equipment requirements are likely to be applicable. Likewise, for emergencies involving injured persons, the requirements of the bloodborne pathogens standard may apply.

While the majority of standards that include emergency-related requirements are addressed in this document, other OSHA standards could be applicable to a particular response action. Information in this section is more thoroughly explained in OSHA Publication 3122, *Principal Emergency Response and Preparedness* ([www.osha.gov/Publications/osha3122.pdf](http://www.osha.gov/Publications/osha3122.pdf)). It summarizes the essential program, procedural, equipment and training requirements in each of the standards identified. It also references online resources, including Internet links, which discuss compliance information for implementing critical requirements. If you view the document online, you can click on any of the highlighted words and phrases and be linked to online materials that define or help clarify the word or phrase as it is used in the standard.

## ***General Industry Requirements for Emergency Response and Preparedness***

### **A. General Requirements for Workplaces**

#### **1. 29 CFR 1910.36, *Design and construction requirements for exit routes***

This standard establishes requirements for the proper design and construction of exit routes. Requirements cover construction materials, opening dimensions, accessibility conditions, capacity and special considerations for exit routes that are outside of a building.

#### **2. 29 CFR 1910.37, *Maintenance, safeguards and operational features for exit routes***

This standard establishes requirements for exit route lighting, marking and nonflammable material maintenance. It also sets requirements for employee alarm systems and procedures for working during construction, repair or alteration. Maintaining exit route standards will prepare the workplace for a successful emergency evacuation.

#### **3. 29 CFR 1910.151, *Medical services and first aid***

To handle potential workplace injuries, employers must ensure that medical personnel and adequate first aid supplies are available to workers. The selection of these resources must be based on the types of hazards in the workplace.

#### **4. 29 CFR 1910.157, *Portable fire extinguishers***

Employees who use portable fire extinguishers can often put out small fires or control a fire until additional help arrives. Before an emergency occurs, employers must decide whether employees are authorized to use fire extinguishers or must immediately evacuate (29 CFR 1910.38). The following section applies to portable fire extinguisher placement, use, maintenance and testing. Employers may exempt themselves from most of the portable fire extinguisher requirements if they develop an EAP in compliance with 1910.38. That plan must be complete. EAP requirements are discussed earlier in this publication.

#### **5. 29 CFR 1910.165, *Employee alarm systems***

Employee alarm systems alert employees to begin implementing emergency action. This section applies when another OSHA standard requires an alarm to notify employees of an emergency. For example, standards that specifically require or reference alarm systems include 29 CFR 1910.37, 1910.38, 1910.66, 1910.106, 1910.120, 1910.157, 1910.160, 1910.161, 1910.162 and 1910.164.

#### **6. 29 CFR 1910.38, *Emergency action plans***

The following standards reference or require compliance with 1910.38: 29 CFR 1910.119, 1910.120, 1910.157, 1910.160, 1910.164, 1910.272, 1910.1047, 1910.1050 and 1910.1051.

## **7. 29 CFR 1910.39, *Fire prevention plans***

This plan requires employers to identify flammable and combustible materials stored in the workplace and ways to control workplace fire hazards. Completing a fire prevention plan and reviewing it with employees reduce the probability that a workplace fire will ignite or spread.

A fire prevention plan is a workplace requirement when another applicable standard requires it. The following standards reference or require compliance with 1910.39: 29 CFR 1910.157, 1910.1047, 1910.1050 and 1910.1051.

## **B. Additional Requirements for Specific Workplaces/Operations**

**This section lists standards that have internal requirements for employers who are within their scope. The required procedures, employee training and available resources are spelled out in OSHA Publication 3122.**

### **1. 29 CFR 1910.66, *Powered platforms for building maintenance***

This standard covers powered platform installations permanently dedicated to interior or exterior building maintenance of a specific structure or group of structures. It includes requirements for an emergency action plan and employee emergency action plan training.

### **2. 29 CFR 1910.111, *Storage and handling of anhydrous ammonia***

This standard covers the design, construction, location, installation and operation of anhydrous ammonia systems including refrigerated ammonia storage systems. Ammonia manufacturing plants and refrigeration plants where ammonia is used solely as a refrigerant are not covered.

### **3. 29 CFR 1910.119, *Process safety management (PSM) of highly hazardous chemicals***

This section focuses on preventing or minimizing consequences from a catastrophic release of toxic, reactive, flammable or explosive chemicals. Processes are covered by this standard when they involve quantities of highly hazardous chemicals equal to or greater than those listed in 1910.119 Appendix A, they involve flammable liquid or gas quantities greater than 10,000 pounds, or they involve the manufacture of explosives or pyrotechnics. Consult 1910.119(a) for special considerations and process exemptions. Successful PSM emergency planning relies on implementing requirements from 29 CFR 1910.38 and/or 1910.120(q).

### **4. 29 CFR 1910.120, *Hazardous waste operations and emergency response; paragraphs (b), Safety and health program, through (o), New technology programs***

This standard covers hazardous substance cleanup operations and corrective actions taken under the Resource Conservation and Recovery Act of 1976 (RCRA). Emergency planning and response are required safety and health program elements that help minimize employee exposure and injury.

### **5. 29 CFR 1910.120(p), *Certain operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA)***

This section covers operations at treatment, storage and disposal facilities regulated by 40 CFR Parts 264 and 265 under RCRA. A well-established emergency response program is required to prepare employees for emergency response activities at these sites.

### **6. 29 CFR 1910.120(q), *Emergency response to hazardous substance releases***

This section covers hazardous substance emergency response operations regardless of the hazard location. The standard requires an emergency response plan and employee training and competency for anticipated emergencies. An incidental release of a hazardous substance is not covered by the standard.

### **7. 29 CFR 1910.124, *General requirements for dipping and coating operations***

This standard establishes design, ventilation, first aid, hygiene and maintenance requirements for dipping and coating operations.

### **8. 29 CFR 1910.146, *Permit-required confined spaces***

This standard requires practices and procedures to protect employees working in permit-required confined spaces. The standard requires an evaluation to determine the existence of permit-required confined spaces, the implementation of a written permit space program, and the establishment of rescue and emergency procedures.

## **9. 29 CFR 1910.156, *Fire brigades***

When an employer establishes a fire brigade to respond to workplace fires, it must meet organizational, training and personal protective equipment requirements. This section applies to fire brigades, industrial fire departments, and private or contractual type fire departments. It does not apply to airport crash rescue or forest fire fighting operations.

## **10. 29 CFR 1910.262, *Textiles***

This section applies to textile machinery, equipment and other plant facility characteristics except processes used exclusively in synthetic fiber manufacturing.

## **11. 29 CFR 1910.266, *Logging operations***

Logging operations include felling and moving trees or logs from the stump to the delivery point. The risk of injury increases with dangerous environmental conditions and when worksites do not have immediate accessibility to health care facilities.

## **12. 29 CFR 1910.268, *Telecommunications***

This section applies to all aspects of work performed at telecommunications centers and at telecommunications field installations. This includes outdoor and indoor locations.

## **13. 29 CFR 1910.269, *Electric power generation, transmission and distribution, and 13 NCAC 07F .0703***

This section covers the operation and maintenance of electric power generation, control, transformation, transmission, and distribution lines and equipment.

## **14. 29 CFR 1910.272, *Grain handling facilities***

Grain handling facility regulations cover a wide range of grain handling operations and include emergency planning and training requirements. Some typical emergencies that may occur at these facilities include fires, explosions and electrocutions.

## **15. 29 CFR 1910, *Subpart T, Diving Operations***

*(Specifically 1910.401, Scope and application; 1910.410, Qualifications of dive team; 1910.420, Safe practice manual; 1910.421, Pre-dive procedures; and 1910.422, Procedures during dive)*

These standards cover diving and related support operations conducted in connection with all types of work and employments, including general industry, construction, ship repairing, shipbuilding, shipbreaking and longshoring. They include requirements for a safe practices manual, including emergency procedures. These standards also require the posting of emergency information, the availability of first aid kit(s), emergency communication equipment, and employee CPR and emergency training.

## **16. 29 CFR 1910.1003, *13 Carcinogens (4-Nitrobiphenyl, etc.);***

*1910.1004, alpha-Naphthylamine*

*1910.1006, Methyl chloromethyl ether*

*1910.1007, 3,3'-Dichlorobenzidine (and its salts)*

*1910.1008, bis-Chloromethyl ether*

*1910.1009, beta-Naphthylamine*

*1910.1010, Benzidine*

*1910.1011, 4-Aminodiphenyl*

*1910.1012, Ethyleneimine*

*1910.1013, beta-Propiolactone*

*1910.1014, 2-Acetylaminofluorene*

*1910.1015, 4-Dimethylaminoazobenzene*

*1910.1016, N-Nitrosodimethylamine*

This standard covers any area in which the 13 carcinogens identified in the standard are manufactured, processed, repackaged, released, handled or stored. The standard requires that an employer establish a regulated area where any of the 13 carcinogens are being handled and includes requirements addressing emergency releases in these areas. An emergency means an unforeseen circumstance or set of circumstances resulting in a carcinogen release that may result in employee exposure to or contact with the material.

**17. 29 CFR 1910.1017, Vinyl chloride**

This section applies to a variety of vinyl chloride or polyvinyl chloride operations and uses but does not apply to the handling or use of fabricated products made of polyvinyl chloride. Emergencies involving vinyl chloride occur when operations are likely to or actually result in a massive vinyl chloride release.

**18. 29 CFR 1910.1027, Cadmium**

This standard applies to all occupational exposures to cadmium and cadmium compounds in all forms. The standard requires the development of a written plan for emergencies involving substantial releases of airborne cadmium and includes requirements for employee training on emergencies and medical examinations.

**19. 29 CFR 1910.1028, Benzene**

This standard covers benzene, in various forms, with exception to some fuels, certain storage facilities, materials with extremely small concentrations and specific operations using benzene. Situations that are considered emergencies involving benzene include, but are not limited to, equipment failure, rupture of containers or failure of control equipment, which may or does result in an unexpected significant benzene release.

**20. 29 CFR 1910.1029, Coke oven emissions**

Coke oven emissions are produced by the destructive distillation or carbonization of coal. Exceptions to applying this standard may occur when other federal agencies exercise statutory authority that affects occupational safety and health. An emergency includes, but is not limited to, equipment failure that is likely to or results in any massive coke oven emission release.

**21. 29 CFR 1910.1044, 1,2-dibromo-3-chloropropane**

This section applies to occupational exposure to 1,2-dibromo-3-chloropropane (DBCP) except when used as a fertilizer or when sealed appropriately in a container. An emergency includes, but is not limited to, equipment failure, rupture of containers or failure of control equipment that may or does result in an unexpected release of DBCP.

**22. 29 CFR 1910.1045, Acrylonitrile**

This section applies to occupational exposures to acrylonitrile (AN). Exceptions apply to some uses, handling, emissions and temperatures. Any unexpected massive AN release is considered an emergency.

**23. 29 CFR 1910.1047, Ethylene oxide**

Ethylene oxide (EtO) possesses several physical and health hazards that merit special attention. This section applies to all occupational exposures to ethylene oxide (EtO) except some processes, uses or handling of products containing EtO. A situation is an emergency when an unexpected significant release of EtO is likely to or does occur. This standard also applies to EtO used in emergency response efforts to clean up anthrax contaminated sites.

**24. 29 CFR 1910.1048, Formaldehyde**

This standard applies to all occupational exposures to formaldehyde. An emergency includes, but is not limited to, equipment failure, rupture of containers or failure of control equipment that results in an uncontrolled release of formaldehyde in a significant amount.

**25. 29 CFR 1910.1050, Methylenedianiline**

This section covers general industry occupational exposures to methylenedianiline (MDA), except as provided by the standard. The standard requires a written plan for emergencies and addresses emergency alerting means, protective equipment, and medical surveillance. "Emergency" means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment that results in an unexpected and potentially hazardous release of MDA.

**26. 29 CFR 1910.1051, 1,3-Butadiene**

This section applies to all occupational exposures to 1,3-Butadiene (BD), except as provided by the standard. The standard requires a written plan for emergencies and addresses protective equipment and medical surveillance. "Emergency situation" means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment that may or does result in an uncontrolled significant release of BD.

## **27. 29 CFR 1910.1052, Methylene Chloride**

This standard applies to all occupational exposures to methylene chloride (MC). It establishes requirements for employers to control occupational exposure to MC and addresses protective equipment, eyewash facilities, and medical surveillance for emergencies. “Emergency” means any occurrence, such as, but not limited to, equipment failure, rupture of containers or failure of control equipment that results in or is likely to result in an uncontrolled release of MC.

## **28. 29 CFR 1910.1450, Occupational exposure to hazardous chemicals in laboratories**

This standard covers the laboratory use of hazardous chemicals and supersedes the health standards of 29 CFR 1910, Subpart Z, with a few exceptions for employee exposure limits, eye and skin contact, and action levels as it relates to medical surveillance. Emergencies in labs include occurrences that result in an uncontrolled release of a hazardous chemical into the workplace.

### **C. Requirements That Support Emergency Response and Preparedness**

This group of standards likely applies to people involved in emergency response activities.

#### **1. 29 CFR 1910.132, General requirements (Personal Protective Equipment)**

This standard applies to PPE for eyes, face, head and extremities (protective clothing); respiratory devices; and protective shields and barriers. Emergency situations often require PPE and must meet these general requirements when not addressed in a hazard- or industry-specific standard.

#### **2. 29 CFR 1910.134, Respiratory protection**

The standard covers respirator use when atmospheric contamination cannot be reduced through effective engineering controls. An emergency situation means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

#### **3. 29 CFR 1910.1000, Air contaminants**

This standard establishes exposure limits for air contaminants. The standard includes ceiling concentrations and 8-hour time-weighted average limits for contaminants. It also provides a designation when exposure to the skin is a significant route of exposure. Note: NCDOL has a state-specific rule that amended the federal rule. The North Carolina rule is listed in the front of the general industry standards book and is also available through the NCDOL Web site. The standard also includes limits for “Acceptable maximum peak above the acceptable ceiling concentration for an 8-hour shift” for some contaminants (Table Z-2). In addition, other OSHA standards include short-term exposure limits for some contaminants.

#### **4. 29 CFR 1910.1030, Bloodborne pathogens**

This section applies to all occupational exposure to blood or other potentially infectious materials. Occupational exposure means reasonably anticipated contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties. Employees who are responsible for rendering first aid or medical assistance as part of their job duties are covered by the protections of the standard.

#### **5. 29 CFR 1910.1200, Hazard communication**

The Hazard Communication Standard is intended to ensure that the hazards of all chemicals produced or imported are evaluated and that information concerning these hazards is transmitted to employers and employees. This standard includes hazardous chemicals that employees may be exposed to in a foreseeable emergency.

**Note:** In addition to the general industry standards highlighted in this publication, the following standards also contain limited emergency-related requirements: 29 CFR 1910.68, Manlifts; 1910.1001, Asbestos; 1910.1018, Arsenic; and 1910.1096, Ionizing radiation. Other parts of 29 CFR have standards that apply to shipyard, marine terminal, longshoring, construction and agriculture activities. OSHA Publication 3122 also contains the standards and a summary of their requirements for those industries.

## NCDOL's Preparation and Readiness for Emergencies

The Occupational Safety and Health Administration's response to the World Trade Center disaster revealed that the physical and emotional well-being of responders along with the fulfillment of public expectations demand a timely, efficient and effective incident response. Therefore, OSHA directed each region to develop a Regional Emergency Management Plan (REMP) and requested state plan states to develop a State Emergency Management Plan (SEMP).

Like OSHA, leaders within the N.C. Department of Labor are aware of the unpredictable and tragic outcome of emergencies and disasters. Therefore, NCDOL issued its SEMP to help reduce the chances of accidental deaths and injuries to North Carolina responders and recovery workers.

The SEMP outlines procedures to ensure trained and equipped personnel are in place to support NCDOL's role as the primary agency for the coordination of technical assistance and consultation for emergency response and recovery worker health and safety.

From natural disasters to acts of terror, the SEMP is designed to address significant events through a combined and coordinated approach, linking the expertise and resources of NCDOL with the emergency management community, local authorities and federal agencies to minimize the loss of life and/or injury to responders and recovery personnel.

The National Response Plan's Worker Safety and Health Support Annex is another recently promulgated document that identifies NCDOL as the coordinator for responder safety and health during emergencies in North Carolina. NCDOL submitted to be included in the North Carolina Emergency Operations Plan: A Worker Safety and Health Support, which became effective in June 2005.

### *How the Occupational Safety and Health Division Supports the State Emergency Response Team (SERT) During Activations*

**Mission.** The N.C. Department of Labor is committed to providing resources, including personnel and equipment, to support and assist North Carolina emergency response agencies and federal organizations in protecting first responders and recovery workers during a local or nationally significant incident.

The goal of NCDOL is to protect responders and recovery personnel and to help them work in as safe and healthful an environment as possible. The N.C. Department of Labor's Occupational Safety and Health Division will provide occupational safety and health technical advice and support to the SERT leader and, if appropriate, at incident sites.

In accordance with the NCDOL State Emergency Management Plan, the OSH Division's primary responsibilities in support of the SERT may include:

- Identifying and assessing health and safety hazards and characterizing the incident environment, to include continued monitoring of incident safety.
- Carrying out responder personal exposure monitoring, including task-specific exposure monitoring for:
  - Toxins
  - Physical stressors (e.g., noise, heat/cold, ionizing radiation)
- In conjunction with DHHS, evaluating the need for longer-term epidemiological medical monitoring and surveillance of responders.
- Assessing responder safety and health resource needs and identifying sources for those assets.
- Developing, implementing and monitoring an incident personal protective equipment program, including the selection, use and decontamination of PPE; implementation of a respirator fit-test program; and distribution of PPE.
- Collecting and managing data (exposure data, accident/injury documentation, etc.) to facilitate consistent data-formatting and data-sharing among response organizations.
- Communicating with labor unions, contractors and other organizations regarding responder safety and health issues.

- Coordinating and providing incident-specific responder training.
- Identifying, in coordination with DHHS, appropriate immunization and prophylaxis for responders and recovery workers.

To support the state's disaster response and recovery efforts, the OSH Division employs safety officers and industrial hygienists.

- Safety officers are trained to identify hazards and potential hazards and perform health hazard assessments.
- As demonstrated in the recent state-wide pandemic flu exercise, industrial hygienists can do fit tests for protective respirators and can fit responders with monitoring devices to monitor their exposure to chemicals, heat, asbestos, noise, radiation, biological hazards, etc.
- Industrial hygienists also perform the most in-depth and complex analysis, including monitoring of air, water, solids and radiation. They can evaluate on-site occupational safety and health programs, assisting in development and improvement of programs when necessary.

## ***References***

*Principal Emergency Response and Preparedness Requirements and Guidance*, Occupational Safety and Health Administration, U.S. Department of Labor, OSHA 3122-06R, 2004.

**The following industry guides are available from the N.C. Department of Labor's Occupational Safety and Health Division:**

- #1. *A Guide to Safety in Confined Spaces*
- #2. *A Guide to Procedures of the N.C. Safety and Health Review Commission* (downloadable PDF **ONLY**)
- #3. *A Guide to Machine Safeguarding*
- #4. *A Guide to OSHA in North Carolina*
- #5. *A Guide for Persons Employed in Cotton Dust Environments* (downloadable PDF **ONLY**)
- #6. *A Guide to Lead Exposure in the Construction Industry* (downloadable PDF **ONLY**)
- #7. *A Guide to Bloodborne Pathogens in the Workplace*
- #8. *A Guide to Voluntary Training and Training Requirements in OSHA Standards*
- #9. *A Guide to Ergonomics*
- #10. *A Guide to Farm Safety and Health* (downloadable PDF **ONLY**)
- #11. *A Guide to Radio Frequency Hazards With Electric Detonators* (downloadable PDF **ONLY**)
- #12. *A Guide to Forklift Operator Training*
- #13. *A Guide to the Safe Storage of Explosive Materials* (downloadable PDF **ONLY**)
- #14. *A Guide to the OSHA Excavations Standard*
- #15. *A Guide to Developing and Maintaining an Effective Hearing Conservation Program*
- #16. *A Guide to Construction Jobsite Safety and Health/Guía de Seguridad y Salud para el Trabajo de Construcción*
- #17. *A Guide to Asbestos for Industry*
- #18. *A Guide to Electrical Safety*
- #19. *A Guide to Occupational Exposure to Wood, Wood Dust and Combustible Dust Hazards* (downloadable PDF **ONLY**)
- #20. *A Guide to Crane Safety*
- #23. *A Guide to Working With Electricity*
- #25. *A Guide to Personal Protective Equipment*
- #26. *A Guide to Manual Materials Handling and Back Safety*
- #27. *A Guide to the Control of Hazardous Energy (Lockout/Tagout)*
- #28. *A Guide to Eye Wash and Safety Shower Facilities*
- #29. *A Guide to Safety and Health in Feed and Grain Mills* (downloadable PDF **ONLY**)
- #30. *A Guide to Working With Corrosive Substances* (downloadable PDF **ONLY**)
- #31. *A Guide to Formaldehyde* (downloadable PDF **ONLY**)
- #32. *A Guide to Fall Prevention in Industry*
- #32s. *Guía de Protección Contra Caídas en la Industria* (Spanish version of #32)
- #33. *A Guide to Office Safety and Health* (downloadable PDF **ONLY**)
- #34. *A Guide to Safety and Health in the Poultry Industry* (downloadable PDF **ONLY**)
- #35. *A Guide to Preventing Heat Stress*
- #38. *A Guide to Safe Scaffolding*
- #40. *A Guide to Emergency Action Planning*
- #41. *A Guide to OSHA for Small Businesses in North Carolina*
- #41s. *Guía OSHA para Pequeños Negocios en Carolina del Norte* (Spanish version of #41)
- #42. *A Guide to Transportation Safety*
- #43. *A Guide to Combustible Dusts*

## **Occupational Safety and Health (OSH) Sources of Information**

**You may call 1-800-NC-LABOR (1-800-625-2267) to reach any division of the N.C. Department of Labor; or visit the NCDOL home page on the World Wide Web: <http://www.nclabor.com>.**

### **N.C. Occupational Safety and Health Division**

Mailing Address:  
1101 Mail Service Center  
Raleigh, NC 27699-1101  
Local Telephone: (919) 807-2900 Fax: (919) 807-2856

Physical Location:  
111 Hillsborough St.  
(Old Revenue Building, 3rd Floor)

*For information concerning education, training and interpretations of occupational safety and health standards contact:*

### **Education, Training and Technical Assistance Bureau**

Mailing Address:  
1101 Mail Service Center  
Raleigh, NC 27699-1101  
Telephone: (919) 807-2875 Fax: (919) 807-2876

Physical Location:  
111 Hillsborough St.  
(Old Revenue Building, 4th Floor)

*For information concerning occupational safety and health consultative services and safety awards programs contact:*

### **Consultative Services Bureau**

Mailing Address:  
1101 Mail Service Center  
Raleigh, NC 27699-1101  
Telephone: (919) 807-2899 Fax: (919) 807-2902

Physical Location:  
111 Hillsborough St.  
(Old Revenue Building, 3rd Floor)

*For information concerning migrant housing inspections and other related activities contact:*

### **Agricultural Safety and Health Bureau**

Mailing Address:  
1101 Mail Service Center  
Raleigh, NC 27699-1101  
Telephone: (919) 807-2923 Fax: (919) 807-2924

Physical Location:  
111 Hillsborough St.  
(Old Revenue Building, 2nd Floor)

*For information concerning occupational safety and health compliance contact:*

### **Safety and Health Compliance District Offices**

**Raleigh District Office** (313 Chapanoke Road, Raleigh, NC 27603)

Telephone: (919) 779-8570 Fax: (919) 662-4709

**Asheville District Office** (204 Charlotte Highway, Suite B, Asheville, NC 28803-8681)

Telephone: (828) 299-8232 Fax: (828) 299-8266

**Charlotte District Office** (901 Blairhill Road, Suite 200, Charlotte, NC 28217-1578)

Telephone: (704) 665-4341 Fax: (704) 665-4342

**Winston-Salem District Office** (4964 University Parkway, Suite 202, Winston-Salem, NC 27106-2800)

Telephone: (336) 776-4420 Fax: (336) 776-4422

**Wilmington District Office** (1200 N. 23rd St., Suite 205, Wilmington, NC 28405-1824)

Telephone: (910) 251-2678 Fax: (910) 251-2654

\*\*\*To make an OSHA Complaint, **OSH Complaint Desk:** (919) 807-2796\*\*\*

*For statistical information concerning program activities contact:*

### **Planning, Statistics and Information Management Bureau**

Mailing Address:  
1101 Mail Service Center  
Raleigh, NC 27699-1101  
Telephone: (919) 807-2950 Fax: (919) 807-2951

Physical Location:  
111 Hillsborough St.  
(Old Revenue Building, 2nd Floor)

*For information about books, periodicals, vertical files, videos, films, audio/slide sets and computer databases contact:*

### **N.C. Department of Labor Library**

Mailing Address:  
1101 Mail Service Center  
Raleigh, NC 27699-1101  
Telephone: (919) 807-2848 Fax: (919) 807-2849

Physical Location:  
111 Hillsborough St.  
(Old Revenue Building, 5th Floor)

### **N.C. Department of Labor (Other than OSH)**

1101 Mail Service Center  
Raleigh, NC 27699-1101  
Telephone: (919) 733-7166 Fax: (919) 733-6197