

Federally Mandated Training

API Committee on Training and Development
CMA Training Task Group

API Publication 1200
Third Edition, January 1998



1300 Wilson Boulevard
Arlington, VA 22209



Federally Mandated Training and Information

API Committee on Training and Development
CMA Training Task Group

API Publication 1200
Third Edition, January 1998



1300 Wilson Boulevard
Arlington, VA 22209



SPECIAL NOTES

1. API PUBLICATIONS NECESSARILY ADDRESS PROBLEMS OF A GENERAL NATURE. WITH RESPECT TO PARTICULAR CIRCUMSTANCES, LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS SHOULD BE REVIEWED.
2. API IS NOT UNDERTAKING TO MEET THE DUTIES OF EMPLOYERS, MANUFACTURERS, OR SUPPLIERS TO WARN AND PROPERLY TRAIN AND EQUIP THEIR EMPLOYEES, AND OTHERS EXPOSED, CONCERNING HEALTH AND SAFETY RISKS AND PRECAUTIONS, NOR UNDERTAKING THEIR OBLIGATIONS UNDER LOCAL, STATE, OR FEDERAL LAWS.
3. INFORMATION CONCERNING SAFETY AND HEALTH RISKS AND PROPER PRECAUTIONS WITH RESPECT TO PARTICULAR MATERIALS AND CONDITIONS SHOULD BE OBTAINED FROM THE EMPLOYER, THE MANUFACTURER OR SUPPLIER OF THAT MATERIAL, OR THE MATERIAL SAFETY DATA SHEET.
4. NOTHING CONTAINED IN ANY API PUBLICATION IS TO BE CONSTRUED AS GRANTING ANY RIGHT, BY IMPLICATION OR OTHERWISE, FOR THE MANUFACTURE, SALE, OR USE OF ANY METHOD, APPARATUS, OR PRODUCT COVERED BY LETTERS PATENT. NEITHER SHOULD ANYTHING CONTAINED IN THE PUBLICATION BE CONSTRUED AS INSURING ANYONE AGAINST LIABILITY FOR INFRINGEMENT OF LETTERS PATENT.
5. GENERALLY, API STANDARDS ARE REVIEWED AND REVISED, REAFFIRMED, OR WITHDRAWN AT LEAST EVERY FIVE YEARS. SOMETIMES A ONE-TIME EXTENSION OF UP TO TWO YEARS WILL BE ADDED TO THIS REVIEW CYCLE. THIS PUBLICATION WILL NO LONGER BE IN EFFECT FIVE YEARS AFTER ITS PUBLICATION DATE AS AN OPERATIVE API STANDARD OR, WHERE AN EXTENSION HAS BEEN GRANTED, UPON REPUBLICATION. STATUS OF THE PUBLICATION CAN BE ASCERTAINED FROM THE API AUTHORIZING DEPARTMENT [TELEPHONE (202) 682-8000]. A CATALOG OF API PUBLICATIONS AND MATERIALS IS PUBLISHED ANNUALLY AND UPDATED QUARTERLY BY API, 1220 L STREET, N.W., WASHINGTON, D.C. 20005.

SCOPE

This document addresses selected health, safety, and environmental regulations of certain federal agencies that may be applicable to refineries, petrochemical plants, chemical plants, and gas-processing plants. The agencies and their regulations include OSHA (29 C.F.R. 1910, general industry standards), EPA (40 C.F.R.), DOT (49 C.F.R.), and NRC (10 C.F.R.). This document does not address all transportation or pipeline regulations or those that may apply offshore.

FOREWORD

On April 6, 1990, the American Petroleum Institute (API) amended its bylaws to incorporate an environmental mission statement and eleven guiding environmental principles. The action renewed and reemphasized the industry's commitment to safe and environmentally sound operations. One of these principles deals specifically with safe plant operations: *To operate our plants and facilities, and to handle our raw materials and products in a manner that protects the environment, and the safety and health of our employees and the public.* This principle has particular relevance in the area of employee training and information transfer, where assurance of safe and environmentally sound operations starts with a properly trained and informed work force.

In November 1988, the Chemical Manufacturers Association (CMA) adopted as a condition of membership an initiative called Responsible Care®: A Public Commitment. The initiative commits member companies to improve performance in response to public concerns about the impact of chemicals on health, safety and environmental quality. There are ten fundamental elements of Responsible Care®, including ten Guiding Principles; six Codes of Management Practices; Code Performance Measures; Self-Evaluations; a Member Material Assistance Network; and a Public Advisory Panel. The implementation of operations training will help achieve compliance with CMA's Responsible Care® Initiative.

The refining, petrochemical, chemical, and gas-processing industries are concerned with the safety and health of their employees, protection of the environment and the well-being of communities surrounding their sites. Examples of API standards and CMA Guidelines that address these issues are API Recommended Practice 750, *Management of Process Hazards*, API/CMA Recommended Practice 2220, *Improving Owner and Contractor Safety Performance*, *CMA Operations Training Guide for Process Safety*, and *CMA Resource Guide for Implementing Process Safety Code of Management Practices*. These and other industry recommendations should be evaluated by those using this Guidance Document.

API/CMA publications may be used by anyone desiring to do so. Every effort has been made by the Institute and CMA to assure the accuracy and reliability of the data contained in them; however, neither the Institute nor CMA makes any representation, warranty, or guarantee in connection with this publication, and the Institute and CMA hereby expressly disclaim any liability or responsibility for loss or damage resulting from its use or for the violation of any federal, state, or municipal regulation with which this publication may conflict. This document is intended as guidance only and should not be considered the primary source for compliance with the regulations identified herein. It is the API's and CMA's goal to maintain this document as current as practicable, but users are encouraged to contact their own internal regulatory compliance organization to keep abreast of regulations that may go into effect after the date printed on the cover of this document.

These materials are not intended to create legal rights in the users or any third parties or obligations for API, CMA, or the users of these materials. Users are, of course, expected to consult and comply with all applicable federal, state and local laws and regulations.

API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any federal, state, or municipal regulation with which this publication may conflict.

Suggested revisions are invited and should be submitted to the Director of the Manufacturing, Distribution and Marketing Department, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005, or CMA's Training Task Group at CMA, 1300 Wilson Boulevard, Arlington, VA 22209.

TABLE OF CONTENTS

	Page
SECTION I—EXECUTIVE SUMMARY	1
SECTION II—USERS' GUIDE	3
SECTION III—TRAINING AND INFORMATION MODULES	
Module Table of Contents	9
Module Set A—Work Place Hazards	13
Module Set B—Safe Work Practices	25
Module Set C—Personal Protective Equipment	43
Module Set D—Job-Specific Requirements	49
Module Set E—Emergency Response	107
SECTION IV—APPENDIXES	
Appendix A—American Petroleum Institute Committee on Training and Development	131
Appendix B—Generic Outline of Training Matrix	133
Appendix C—Terminology	137
SECTION V—INDEXES	
Index A—List of Modules Alphabetically Indexed by Subject	141
Index B—List of Modules Numerically Indexed by Regulation	143

SECTION I—EXECUTIVE SUMMARY

Under the auspices of the American Petroleum Institute (API) General Committee of Refining's Central Committee on Training and Development, a Task Force was formed in 1990 to address the needs of refining, petrochemical, and gas-processing companies in their efforts to comply with federally mandated training and information transfer requirements in the most efficient manner. In 1988, The Chemical Manufacturers Association (CMA) adopted an initiative called Responsible Care®: A Public Commitment. The initiative commits member companies to improve performance in response to public concerns about the impact of chemicals on health, safety and environmental quality. The implementation of operations training will help achieve compliance with CMA's Responsible Care® Initiative. In early 1992, the CMA's Engineering and Operations Committee created a training task group. One of the first projects of this group was to review API's work on the Federally Mandated Training Guide and submit additional training models requested by CMA members.

The following Guidance Document has been prepared to

- a. Identify employee safety, health, and environmental training and/or information transfer requirements that should meet the federal regulations applicable to the industry.
- b. Develop performance-based training and/or information transfer objectives the achievement of which should serve as observable evidence that training has been effective and/or that required information has been provided to the employee.
- c. Cite related materials in a manner that should help streamline the development of a training and/or information transfer program or process.

Training and Information Modules included in this Guidance Document, which are generally applicable to the refining, petrochemical, chemical, and gas-processing facilities, specify observable performance criteria to indicate that training or the imparting of information has been successfully completed. These training and information objectives are suggested targets, and they can be used by the trainers to evaluate the efficacy of the communication process. They are not mandated by the regulations, and they are not to be construed as de facto requirements by the employer, the employees, or federal or state agencies. Since sites vary significantly in worker population, plant environment, information networks, training delivery systems, company culture, and the like, the methods of delivering the training or information to accomplish identified worker-performance objectives is best left to the employer.

If assistance is needed to develop detailed training or information transfer programs, API's District Training and Development Committee and other specialty conferences, held throughout the year, provide a forum for both new and experienced personnel to share information and ideas. Information pertaining to these conferences can be found in Appendix A.

SECTION II—USERS' GUIDE

These Guidelines have been developed to assist refinery, petrochemical, chemical and gas-processing plant training organizations in their efforts to comply with federally mandated training and information transfer requirements. For each identified Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Department of Transportation (DOT), and Nuclear Regulatory Commission (NRC) regulation that requires training and/or information transfer or that refers to “qualified” employees, a module was created to present the training and/or information transfer requirements identified in the regulation.

Organization of Modules

Modules have been grouped into five core curricula:

- Module Set A—Work Place Hazards.
- Module Set B—Safe Work Practices.
- Module Set C—Personal Protective Equipment.
- Module Set D—Job-Specific Requirements.
- Module Set E—Emergency Response.

A summary of the curricula is included with respective modules. These categories were selected to organize the modules into related areas of training and/or information transfer and are not intended to restrict users of these guidelines in developing their own curriculum. Modules are also listed alphabetically by subject in Index A and numerically by regulatory reference in Index B.

Description of Modules

Each module identifies the primary *Regulatory Reference*, the *Affected Personnel*, or *Who Must Be Trained* and/or receive information, its *Frequency* (when training and/or information transfer is to take place—initially and/or as a refresher), the *Time Required* (if specified in the regulation), and a *Content Overview* (a general description of the training and/or information transfer involved).

A key element of each module is its *Suggested Training Objectives* (or *Information Objectives*). These are written in performance-based language, describing what an employee who has successfully completed the module should know and/or be able to do. To enable measurement of the results of training and/or information transfer, learned behaviors must be observable. Once learned, observable behavior can and should be tested, either orally, in writing, or by demonstration.

An example of a specific regulatory requirement for such documentation and measurement can be found in 29 C.F.R. 1910.119, Process Safety Management of Highly Hazardous Chemicals, paragraph g, subparagraph 3, Training Documentation. This subparagraph states “The employer shall ascertain that each employee involved in operating a process has received and understood the training required by this paragraph. The employer shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.”

Since site-to-site differences exist in worker population, plant environment, company culture, and training and/or information transfer delivery systems, it was judged that the selection of methods of delivering training and/or information for the achievement of identified worker-performance objectives was best left to the employer.

This document is intended as guidance only and should not be considered the primary source for compliance with the regulations identified herein. For example, the objectives presented in these guidelines are for the purpose of assisting users of these guidelines in preparing and delivering materials, and not all objectives presented require verification. The actual regulations should be consulted in the development of any materials. These training and information objectives are suggested targets, and can be used by the trainers to evaluate the efficacy of the communication process. They are not mandated by the regulations, and are not to be construed as de facto requirements necessarily by the employer, the employees, or federal or state agencies.

Every effort has been made to not interpret the regulations, as interpretation will vary. Information contained in the modules has, in many cases, been quoted directly. The regulations govern all requirements. An additional source of information for OSHA regulations is *Training Requirements in OSHA Standards and Training Guidelines*, OSHA Publication 2254, 1992.

While not all-inclusive, the last three elements of each module contain helpful references. The first, *Incorporated by Reference*, lists those regulations that are specifically referred to and that impact the training and/or information transfer requirements in the subject regulation. Not all listed references are found in the training portion of the regulation: some may be found in the non-training portion of the regulation. These selected references are listed to assist users, and the list is not meant to be all-inclusive. *Other Regulations with Similar Training/Information Provisions* addresses the overlap that occurs in the law and recognizes that certain training and/or information transfer can satisfy portions of several different regulations. Lastly, *Other Resources* lists references—such as manuals, manufacturers' information, OSHA publications, American National Standards Institute (ANSI) and other standards, related company procedures, and the like—that would be helpful to users of these guidelines.

In case assistance is needed to develop more detailed programs, API's District Training and Development Committee and other specialty conferences, held throughout the year, provide a forum for both new and experienced personnel to share information and ideas. Information pertaining to these conferences can be found in Appendix A. Information on CMA's Training Task Group can be found in Appendix B.

Training Matrix

To assist users of these guidelines in organizing their own curricula and programs, a training matrix in outline form is included in Appendix C. This or a similar document can be an effective management tool in identifying and organizing the scope of location training and/or information transfer.

Training–Related Terminology

Appendix D contains a list of training-related terms that frequently appear in the regulations and these guideline modules. Definitions have been extracted from the regulations and may be helpful.

Organizing and Preparing Mandatory Training and/or Information Transfer Programs

The following suggestions are offered to help users of these guidelines organize and prepare training and/or information transfer programs.

1. Review modules and employee population to determine who needs training and/or information transfer and on what subjects they need it.
2. Review and summarize objectives associated with the subjects identified.

3. Where objectives are closely related or comparable, group these and note the regulations satisfied.
4. Design course materials, training and/or information transfer media, and the like that are directed toward consolidating the objectives. Use of job-related examples is recommended. Worker involvement in the selection of materials and examples can be beneficial as workers are most knowledgeable of workplace conditions.
5. Develop a plan of instruction that ensures that all job-related objectives are included in the training and/or information transfer program.
6. Once the employer has determined that training and/or information transfer has been satisfactorily completed, as indicated by the satisfaction of applicable segments of regulations identified in step 3, the training and/or information transfer should be appropriately documented.

Suggested revisions to these guidelines are invited and should be submitted to the Director of the Manufacturing, Distribution and Marketing Department, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005, or the CMA Training Task Group, 1300 Wilson Boulevard, Arlington, VA 22209.

SECTION III—TRAINING AND INFORMATION MODULES

MODULE TABLE OF CONTENTS

Page

MODULE SET A—WORK PLACE HAZARDS

1. OSHA (29 C.F.R. 1910)		
a. Access to Employee Exposure and Medical Records	.20	15
b. Occupational Noise Exposure	.95	16
c. Ionizing Radiation	.96	17
d. Specifications for Accident Prevention Signs and Tags	.145	18
e. Asbestos—Communication of Hazards to Employees	.1001 ¹	19
f. Hazard Communication	.1200	21
g. Training Requirements for Workers Exposed to Acrylonitrile	.1045	23
h. Training Requirements for Personnel Working on Electrical Installations with Exposed Live Parts >600 Volts.....	.303	24

MODULE SET B—SAFE WORK PRACTICES

1. OSHA (29 C.F.R. 1910)		
a. Process Safety Management of Highly Hazardous Chemicals	.119	27
i. Process Operators		27
ii. Process Maintenance Employees.....		29
iii. Contract Employees		30
b. Permit-Required Confined Spaces	.146	31
c. Control of Hazardous Energy Sources (Lockout/Tagout)	.147	34
d. Electric Power Generation, Transmission, and Distribution	.269	36
e. Safety-Related Work Practices—Electrical	.332	38
f. Operation of Ladder Trucks, Tower Trucks, and Articulating Boom Platforms....	.67	40
2. OSHA (29 C.F.R. 1926)		
a. Scaffolding	.454	41

MODULE SET C—PERSONAL PROTECTIVE EQUIPMENT

1. OSHA (29 C.F.R. 1910)		
a. Personal Protection Equipment	.132	45
b. Eye and Face Protection	.133	47
c. Respiratory Protection	.134	48

MODULE SET D—JOB-SPECIFIC REQUIREMENTS

1. OSHA (29 C.F.R. 1910)		
a. Powered Platforms for Building Maintenance	.66	51
b. Ventilation—Open Surface Tanks	.94	52
c. Hydrogen (Liquified Hydrogen Systems)	.103	53
d. Flammable and Combustible Liquids	.106	54
e. Storage and Handling of Liquefied Petroleum Gases	.110	55
f. Storage and Handling of Anhydrous Ammonia	.111	56
g. Hazardous Waste Operations/Emergency Response TSD Facilities	.120	57

¹Also see 29 C.F.R. 1926.58.

		Page
h. Servicing Multi-Piece and Single-Piece Rim Wheels	.177	60
i. Powered Industrial Trucks/Material Handling Equipment	.178 ²	62
j. Overhead and Gantry Cranes	.179	63
k. Crawler Locomotive and Truck Cranes	.180	64
l. Derricks	.181	65
m. Slings	.184	66
n. Welding, Cutting, Brazing	.252	67
o. Oxygen-fuel Gas Welding and Cutting	.253	68
p. Arc Welding and Cutting	.254	69
q. Toxic and Hazardous Substances—Selected Substances	Subpart Z	70
r. Vinyl Chloride	.1017	72
s. Cadmium	.1027	73
t. Benzene	.1028	75
u. Occupation Exposure to Bloodborne Pathogens	.1030	76
v. Ethylene Oxide	.1047	78
w. Formaldehyde in the Workplace	.1048	80
x. Occupational Exposure to Hazardous Chemicals in Laboratories	.1450	82
y. Lead	.1025	84
2. EPA (40 C.F.R.)		
a. RCRA Personnel Training	264.16	85
b. UIC Program.....	144.51	87
c. Training for Generators of Hazardous Waste Who Accumulate Waste On-Site	262.34	88
3. DOT (49 C.F.R.)		
a. Procedures for Transportation Workplace Drug-Testing Programs	199.19	89
b. Training for Safe Transportation of Hazardous Materials	172.704	90
c. Hazardous Materials—Shipping and Packaging	173.1	92
d. Transportation of Flammable Cryogenic Liquids	177.816	93
e. NDT ³ of Gas and Hazardous Liquid Pipeline Welds	192.243/195.234	95
f. Qualifying Persons to Make Joints on Plastic Pipe	192.285	96
g. Plastic Pipe, Inspection of Joints	192.287	97
h. Requirements for Corrosion Control	192.453	98
i. DOT Anti-Drug Plan	199.239	99
j. Truck/Trailer and/or Cargo Tank Safety	390.3	101
4. NRC (10 C.F.R.)		
a. Instruction to Workers	19.12	102
b. Radiation Protection—Instruction of Personnel	20.206	104
c. Licensing (For Use of Radioactive Materials)	30.33	106

MODULE SET E—EMERGENCY RESPONSE

1. OSHA (29 C.F.R. 1910)		
a. Employee Emergency Plans and Fire Prevention Plans; and Alarm Systems	.38/.165	109

²Also see 29 C.F.R. 1926.602.

³Nondestructive Testing.

	Page
b. Flammable and Combustible Liquids	106 110
c. Hazardous Waste Operations and Emergency Response	120 111
i. General Training	111
ii. First Responder Awareness Level	113
iii. First Responder Operations Level	114
iv. Hazardous Materials Technician	115
v. Hazardous Materials Specialist	116
vi. On Scene Incident Commander	117
d. Medical Services and First Aid	151 118
e. Fire Brigades	156 119
f. Fire Protection Equipment	155, .157, .158, .160,.164 120
2. EPA (40 C.F.R.)	
a. Oil Spill Response—Facility.....	112.21 122
b. Spill Prevention Control and Countermeasure Plans	112.7 123
3. DOT (49 C.F.R.)	
a. Emergency Plans for Gas Pipelines	192.615 124
b. Training—Operation, Maintenance and Emergency Response of Liquid Pipelines	195.403 126
c. LPG and Other Gas Transportation Pipelines.....	192.11/.515/.603..... 128

MODULE SET A—WORK PLACE HAZARDS

	Page
1. OSHA (29 C.F.R. 1910)	
a. Access to Employee Exposure and Medical Records	.20 15
b. Occupational Noise Exposure	.95 16
c. Ionizing Radiation	.96 17
d. Specifications for Accident Prevention Signs and Tags	.145 18
e. Asbestos—Communication of Hazards to Employees	.1001 ¹ 19
f. Hazard Communication	.1200 21
g. Training Requirements for Workers Exposed to Acrylonitrile.....	.1045 23
h. Training Requirements for Personnel Working on Electrical Installations with Exposed Live Parts >600 Volts.....	.303 24

¹Also see 29 C.F.R. 1926.58.

Subject	Access to Employee Exposure and Medical Records
Regulatory Reference	29 C.F.R. 1910.20(g)
Affected Employees	Employees who may be exposed to toxic substances or hazardous physical agents.
Frequency	Prior to initial assignment and annually thereafter.
Information Content Overview	Each employer shall inform current employees covered by this section of the following: a. The existence, location, and availability of any records covered by this section; b. The person responsible for maintaining and providing access to records; and c. Each employee's rights of access to these records.
Information Objectives	Upon successful completion, employees will be able to: 1. Understand the requirements of this standard; and 2. Access their medical records.
Incorporated by Reference	NIOSH Registry of Toxic Effects of Chemical Substances (RTECS)
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.1028 Benzene 29 C.F.R. 1910.95 Occupational Noise Exposure/Protection 29 C.F.R. 1910.96 Ionizing Radiation 29 C.F.R. 1910 Subpart Z—Toxic and Hazardous Chemicals
Other Resources	OSHA Publication No. 3110, <i>Access to Medical and Exposure Records</i> Company Procedures

Subject	Occupational Noise Exposure
Regulatory Reference	29 C.F.R. 1910.95(k)
Who Must Be Trained	All employees who are exposed to a noise level at or above an 8-hour time-weighted average of 85 decibels (db).
Frequency of Training	Initially and annually thereafter.
Content Overview	1. The effects of noise on hearing. 2. Purpose, selection, and proper use of and care of various types of hearing protection. 3. The purpose of audiometric testing, and an explanation of test procedures. 4. OSHA standard, and supplementary materials.
Suggested Training Objectives	Upon successful completion of training, employees will be informed of the following: 1. The effects of noise on hearing; 2. The areas in their facility where hearing protection is required; 3. The purpose of hearing protectors, the various types available, and their use; 4. The advantages, disadvantages, and attenuation of the various types of hearing protectors available; 5. The ability to properly select, fit, use and care for the various hearing protectors available to them; 6. The purpose of audiometric testing and how employees can obtain their test results; and 7. The location and availability of the company written Hearing Conservation Program and OSHA Standard.
Incorporated by Reference	29 C.F.R. 1910.20 Access to Employee Exposure and Medical Records 29 C.F.R. 1910.145 Specifications for Accident Prevention Signs and Tags
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Company Written Hearing Conservation Program

Subject	Ionizing Radiation
Regulatory Reference	29 C.F.R. 1910.96(i)
Who Must Be Trained	All individuals working in or frequenting any portion of a radiation area.
Frequency of Training	Not explicitly stated. Upon assignment to a radiation area.
Content Overview	1. Safety problems associated with exposure to radiation. 2. The occurrence of ionizing radiation sources in the workplace. 3. Procedures and devices used to minimize exposure. 4. The employee's right to request radiation exposure reports. 5. Applicable provisions of the regulations for protection of employees from radiation. 6. Reports of radiation exposure which employees request under the standard.
Suggested Training Objectives	Upon successful completion of training, employees will be informed of 1. The location and sources of ionizing radiation which exist in their work area; 2. The safety and health problems associated with exposure to ionizing radiation; 3. The devices available to minimize exposure; 4. Procedures which must be followed in the event of a radiation emergency; 5. The warning devices and signs used in the facility; and 6. The employee's right to request radiation reports.
Incorporated by Reference	10 C.F.R. Part 20 Standards for Protection Against Radiation Atomic Energy Act 1954 42 USC 2011 et seq. Section 274(b) (42USC 2021(b))
Other Regulations with Similar Training/Information Provisions	10 C.F.R. Part 19 Notices, Instructions, and Reports to Workers; Inspections 29 C.F.R. 1910.20 Access to Employee Exposure and Medical Records 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Company Procedures

Subject	Specifications for Accident Prevention Signs and Tags
Regulatory Reference	29 C.F.R. 1910.145(c)(1)(ii), (2)(ii) and (3)
Who Must Be Trained	All employees.
Frequency of Training	Not specifically stated.
Content Overview	Basic employee training will include the following elements: 1. Danger signs indicate immediate danger and special precautions are necessary; 2. Cautions signs indicate a possible hazard against which proper precautions should be taken; and 3. Safety instruction signs are used where there is a need for general instructions relative to safety measures.
Suggested Training Objectives	Upon successful completion of training, employees will be able to 1. Identify signs and tags by color, shape, pictograph, and/or signal words used on site; 2. Describe what hazard is present and what level of hazard exists; and 3. Describe precautions to take for personal protection as indicated by signs.
Incorporated by Reference	NFPA 704 ID of Materials DOT49 C.F.R. 172.500 Subpart F American National Standard Z53.1-1967
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.37 Means of Egress 29 C.F.R. 1910.66 Powered Platforms 29 C.F.R. 1910.68 Man Lifts 29 C.F.R. 1910.95 Hearing Conservation 29 C.F.R. 1910.96 Ionizing Radiation 29 C.F.R. 1910.97 Non-ionizing Radiation 29 C.F.R. 1910.134 Respiratory Protection 29 C.F.R. 1910.144 Safety Color Code For Marking Physical Hazards 29 C.F.R. 1910.147 Control of Hazardous Energy Sources (Lockout/Tagout) 29 C.F.R. 1910.179 Overhead and Gantry Cranes 29 C.F.R. 1910.252 Welding, Cutting, & Brazing 29 C.F.R. 1910.1001 Asbestos 29 C.F.R. 1910.1028 Benzene 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Internal Company Labeling Procedures

Subject	Asbestos—Communication of Hazards to Employees: Employee Information and Training
Regulatory Reference	29 C.F.R. 1910.1001(j)(5) [Exposure to asbestos in construction work is covered by 29 C.F.R. 1926.58]
Who Must Be Trained	All employees who are exposed to airborne concentrations of asbestos at or above the action level and/or excursion limit. (Action level = airborne concentration of 0.1 fiber per cc (f/cc) on 8-hour time-weighted average. Excursion limit = 1.0 f/cc over sampling period of 30 minutes.)
Frequency of Training	Prior to or at the time of initial assignment and at least annually thereafter.
Content Overview	Training Program must provide the following information: 1. Health effects of exposure to asbestos and the relationship between exposure to asbestos and smoking in producing lung cancer; 2. The quantity, location, release, manner of use and storage of asbestos; 3. The specific nature of operations that could result in exposure; 4. Engineering controls and work practices associated with employee's job assignment; 5. Respiratory protection; 6. Purpose and description of medical surveillance program; 7. Complete copy of the standard, including appendices; 8. Specific procedures implemented to protect employees from asbestos exposure, including work practices, emergency and cleanup procedures, and personal protective equipment; 9. Names, addresses, and phone numbers of organizations who conduct smoking cessation programs; 10. Information on self-help smoking cessation programs; and 11. Requirements for posting signs and affixing labels and the meanings of such signs and labels.
Suggested Training Objectives	Upon successful completion, employees will be informed of the following: 1. The hazards of asbestos, including health effects of exposure, specific health problems, and methods of entry of asbestos into body; 2. The relationship between smoking and asbestos exposure; 3. What the Permissible Exposure Limit is for asbestos and how monitoring is conducted; 4. The location of any asbestos-containing material in the employee's work area; 5. Engineering controls and work practices used when working around asbestos; 6. Procedures to be implemented to protect employees during emergency and cleanup procedures; 7. The type of respirator and protective clothing to be used in working around asbestos; 8. Hygiene practices used when dealing with asbestos; 9. The housekeeping procedures required when dealing with asbestos; 10. The elements required in a medical surveillance program for asbestos; and 11. Where the appropriate information on asbestos is available for inspection. Supervisors, in addition to completing the worker's requirements, will be able to explain 1. The operation, maintenance, and inspection of engineering controls; 2. The respirator program; 3. Housekeeping procedures for asbestos cleanup; 4. Hygiene facilities and procedures required; and 5. This training outline and the content of each area.

Incorporated by Reference	29 C.F.R. 1910.20 Access to Medical Records 29 C.F.R. 1910.133 Eye and Face Protection 29 C.F.R. 1910.134 Respiratory Protection 29 C.F.R. 1910.157 Portable Fire Extinguishers 29 C.F.R. 1910.1200 Hazard Communication 29 C.F.R. 1926.58 Asbestos (Construction Work) 40 C.F.R. 61 Subpart M—National Emission Standard for Asbestos NIH Publication No. 89-1647
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.20 Access to Employee Exposure and Medical Records 29 C.F.R. 1910.133 Eye and Face Protection 29 C.F.R. 1910.134 Respiratory Protection 29 C.F.R. 1910.157 Portable Fire Extinguishers 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	OSHA Publication 3095, <i>Asbestos Standard for General Industry</i> OSHA Publication 3096, <i>Asbestos Standard for Construction</i>

Subject	Hazard Communication
Regulatory Reference	29 C.F.R. 1910.1200(h)
Who Must Be Trained	All employees that may be exposed to hazardous chemicals, as defined by 29 C.F.R. 1910.1200, either under normal conditions or foreseeable emergencies.
Frequency of Training	Upon initial assignment and whenever a new hazard is introduced into the employee's work area. Retraining is not specified here but is required under other regulation such as 29 C.F.R. 1910.120(e)(8).
Content Overview	1. <i>Information.</i> Employees must be informed of the following: a. The requirements of the hazard communication standard; b. Any operations in their work area where hazardous chemicals are present; and c. The location and availability of the written hazard communication program, including the list of hazardous chemicals and required Material Safety Data Sheets. 2. <i>Training.</i> Employee training must include a. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area, e.g. i. Monitoring by the employer; ii. Continuous monitoring devices; and iii. Visual appearance or odor of hazardous chemicals when released. b. Physical and health hazards of the chemicals in the work area; c. Measures employees can take to protect themselves from hazards, e.g. i. Appropriate work practices; ii. Emergency procedures; and iii. Personal protective equipment. d. Details of the company's hazard communication program, including i. Explanation of labeling system; ii. Explanation of Material Safety Data Sheets; and iii. How to obtain appropriate hazard information.
Suggested Training Objectives	Upon successful completion of this training the employee will be informed of the following: 1. The company's Hazard Communication Program, including the labeling system, where and how to obtain hazard information, and how to use Material Safety Data Sheets; 2. Knowledge and skills appropriate to their job level on chemical detection, signs of exposure and monitoring for chemical exposure; 3. How to choose and use appropriate personal protective equipment; 4. Measures they can take to prevent exposure to chemical hazards such as work practices and emergency procedures; and 5. The physical and health hazards of the chemicals they may encounter in their work place.
Incorporated by Reference	None
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.38 Emergency Plans and Fire Prevention 29 C.F.R. 1910.96 Ionizing Radiation 29 C.F.R. 1910.120 Hazardous Waste Operations and Emergency Response

29 C.F.R. 1910.133 Respiratory Protection
29 C.F.R. 1910.145 Accident Prevention Signs and Tags
29 C.F.R. 1910.156 Fire Brigades

Other Resources

Company written Hazardous Communication Program and applicable MSDSs
OSHA Publication 3084, *Chemical Hazard Communication*
OSHA Publication 3111, *Hazard Communication Guidelines for Compliance*

Subject	Training Requirements for Workers Exposed to Acrylonitrile
Regulatory Reference	29 C.F.R. 1910.1045(o)(1) and (2)
Who Must Be Trained	All workers subject to acrylonitrile (AN) above the action level of 1 part per million as calculated on an 8-hour time weighted-average or whose exposures are below action level because of controls or work practices, and all employees subject to skin or eye contact with AN.
Frequency of Training	Initial assignment and annually thereafter.
Content Overview	Content shall include the following: 1. The quantity, location, manner of use, release, or storage of AN, and the specific nature of operations which could result in exposure to AN, as well as any necessary protective steps; 2. The purpose, proper use, and limitations of respirators and protective clothing; 3. The purpose and a description of the medical surveillance program required by paragraph (n) of the standard; 4. The emergency procedures developed; 5. Engineering and work practice controls, their function, and the employee's relationship to these controls; and 6. A review of the standard and its appendices.
Suggested Training Objectives	Upon successful completion of training, employees will be able to: 1. Identify the quantity, location, manner of use, release, or storage of AN; 2. Identify the specific nature of operations which could result in exposure to AN above the action level; 3. Identify any necessary protective steps to protect against AN exposure; 4. State the purpose and limitations of respirators; 5. Demonstrate the proper selection, fitting and use of respirators; 6. Describe the medical surveillance program; 7. Describe the emergency procedures developed to respond to emergencies involving AN; and 8. Identify the engineering controls and work practices associated with the employee's job assignment to protect against AN exposure.
Incorporated by Reference	29 C.F.R. 1910.132 Personal Protective Equipment 29 C.F.R. 1910.133 Eye and Face Protection 29 C.F.R. 1910.134 Respiratory Protection 29 C.F.R. 1910.141 Sanitation 29 C.F.R. 1910.1020 Medical Records
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.145 Specifications for Accident Prevention Signs and Tags 29 C.F.R. 1910.151 Medical Services and First Aid 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Company policies and procedures Applicable Material Safety Data Sheets

Subject	Training Requirements for Personnel Working on Electrical Installations with Exposed Live Parts >600 volts
Regulatory Reference	29 C.F.R. 1910.303(h)(2)(i)
Who Must Be Trained	Persons working at electrical installations energized at more than 600 volts and who may be exposed to live parts.
Frequency of Training	None specified in the regulation.
Content Overview	Not specified in regulation. Regulation states that only “qualified” persons may work in such areas. This implies some level of training or expertise in electrical work.
Suggested Training Objectives	See above.
Incorporated by Reference	29 C.F.R. 1910.302 Electric Utilization Systems
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.147(c)(7) Training for Employees Involved in Work Requiring Energy Control 29 C.F.R. 1910.269(d) Training Requirements for General Industry Workers who Service or Maintain Machines or Equipment That Require Hazardous Energy Control Procedures 29 C.F.R. 1910.332 Training for Employees who Face a Risk of Electric Shock 29 C.F.R. 1926.950 General Requirements Power Transmission 29 C.F.R. 1926.957 Construction in Energized Substations
Other Resources	Company policies and procedures

MODULE SET B—SAFE WORK PRACTICES

	Page
1. OSHA (29 C.F.R. 1910)	
a. Process Safety Management of Highly Hazardous Chemicals 119	27
i. Process Operators	27
ii. Process Maintenance Employees	29
iii. Contract Employees	30
b. Permit-Required Confined Space 146	31
c. Control of Hazardous Energy Sources (Lockout/Tagout) 147	34
d. Electric Power Generation, Transmission, and Distribution 269	36
e. Safety-Related Work Practices—Electrical 332	38
f. Operation of Ladder Trucks, Tower Trucks and Articulating Boom Platforms 67	40
2. OSHA (29 C.F.R. 1926)	
a. Scaffolding..... 454	41

Subject	Process Safety Management of Highly Hazardous Chemicals— Process Operators
Regulatory Reference	29 C.F.R. 1910.119(g)
Who Must Be Trained	Each employee presently involved in operating a covered process and each employee before being involved in operating a newly assigned covered process.
Frequency of Training	1. Initial Training—Prior to a new operating assignment and prior to startup of a modified process (reference paragraph (l), Management of Change, in the standard.) 2. Refresher Training at least every three years, and more often if necessary as determined by the employer in consultation with the employees involved in operating the process.
Content Overview	Initial training should consist of the following: 1. An overview of the process. For example, unit flow, chemistry and process controls; 2. Current and accurate operating and emergency procedures, including the following items as listed in the regulation, paragraph (f): a. Steps for operating phases of: initial startup, normal operation, normal shutdown and startup, temporary operations, emergency operations including emergency shutdowns, and startup following a turnaround or after an emergency shutdown; b. Operating limits including: Consequences of deviation, steps to correct and/or avoid deviations, and safety systems and functions; c. Safety and health considerations, including: Properties and hazards of process chemicals (MSDS), exposure prevention precautions, exposure control measures to be taken if physical contact or airborne exposure occurs, control of raw materials and hazardous chemical inventory levels, and any special or unique hazards; and d. Safety systems and their functions; 3. Training must include emphasis on: a. Specific safety and health hazards; b. Emergency operations including shutdown; and c. Safe work practices applicable to the employee's job tasks. Refresher training should assure that covered employees understand and adhere to current operating procedures.
Suggested Training Objectives	1. Upon successful completion of initial training, employee will understand: a. An overview of the process; b. Safety and health hazards of the job; c. Current and accurate operating and emergency procedures (see paragraph (f) of regulation); d. Where these procedures are located for ready access; and e. Safe work practices. 2. Refresher training; assure employee understands and adheres to the current operating procedures of the process.
Incorporated by Reference	29 C.F.R. 1910.38(a) Emergency Action Plan 29 C.F.R. 1910.252(a) Fire Prevention and Protection (Hot Work Permit)

Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.38 Employee Emergency Plans/Fire Protection 29 C.F.R. 1910.120 Hazardous Waste Operations and Emergency Response 29 C.F.R. 1910.146 Permit-Required Confined Spaces 58 Fed. Reg. 4462 (1/14/93) 29 C.F.R. 1910.147 The Control of Hazardous Energy (Lockout/Tagout) 29 C.F.R. 1910.156 Fire Brigades 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Preamble to 29 C.F.R. 1910.119 FR Vol 57, No. 36, 2/24/92, pp. 6380–6384 Appendix D to 29 C.F.R. 1910.119 Company Process Operating Procedures and Safe Work Practices API Recommended Practice 750, <i>Management of Process Hazards</i>, First Edition, January 1990 OSHA Publication 3132, <i>Process Safety Management</i>, 1992 OSHA Publication 3133, <i>Process Safety Management Guidelines for Compliance</i>, 1992 OSHA Instruction CPL 2-2.45A, <i>Process Safety Management of Highly Hazardous Chemicals—Compliance Guidelines and Enforcement Procedures</i>, September 1992 CMA Operations Training Guide for Process Safety

Subject	Process Safety Management of Highly Hazardous Chemicals— Process Maintenance Employees
Regulatory Reference	29 C.F.R. 1910.119(j)(3)
Who Must Be Trained	Each employee involved in maintaining the on-going integrity of process equipment. For example, maintenance and inspection personnel.
Frequency of Training	Not specified in standard. A suggested frequency is upon initial assignment or prior to startup of the affected part of the process. (<i>NOTE:</i> The standard is silent on “refresher training” for these employees, although the management of change provisions (paragraph l) help ensure that maintenance employees are provided details of process changes that could affect safe job performance.)
Content Overview	Training must include the following: 1. Overview of process and its hazards; and 2. Procedures applicable to the employee’s job tasks. Although the regulations do not specify, this could typically include maintenance and inspection of equipment and controls that are critical to preventing or mitigating a catastrophic release of highly hazardous chemicals in the workplace.
Suggested Training Objectives	To assure that the employee can perform the job tasks in a safe manner. Upon successful completion of training, employee should be informed of the following: 1. The overview of the process; and 2. The hazards and procedures applicable to the employee’s job tasks.
Incorporated by Reference	29 C.F.R. 1910.38(a) Emergency Action Plan 29 C.F.R. 1910.252(a) Fire Prevention and Protection (Hot Work Permit)
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.38 Employee Emergency Plans/Fire Protection 29 C.F.R. 1910.120 Hazardous Waste Operations and Emergency Response 29 C.F.R. 1910.146 Permit-Required Confined Spaces 58 Fed. Reg. 4462 (1/14/93) 29 C.F.R. 1910.147 The Control of Hazardous Energy (Lockout/Tagout) 29 C.F.R. 1910.156 Fire Brigades 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Appendix D to 29 C.F.R. 1910.119 Company Process Operating Procedures and Safe Work Practices API Recommended Practice 750, <i>Management of Process Hazards</i> , First Edition, January 1990 OSHA Publication 3132, <i>Process Safety Management</i> , 1992 OSHA Publication 3133, <i>Process Safety Management Guidelines for Compliance</i> , 1992 OSHA Instruction CPL 2-2.45A, <i>Process Safety Management of Highly Hazardous Chemicals—Compliance Guidelines and Enforcement Procedures</i> , September 1992 CMA Operations Training Guide for Process Safety

Subject	Process Safety Management of Highly Hazardous Chemicals— Contract Employees Associated with a Covered Process
Regulatory Reference	29 C.F.R. 1910.119(h); 29 C.F.R. 1910.119(f)(4),(n)
Affected Personnel	Contract employees performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. Does not apply to contractors providing incidental services which do not influence process safety.
Employer (Owner) Responsibility	1. Inform contract employers of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process. 2. Explain to contract employers the applicable provisions of the emergency action plan set forth in 29 C.F.R. 1910.38(a). Procedures for handling small releases must be included in the plan and explained. 3. Develop and implement safe work practices consistent with paragraph (f)(4) of the standard to control the entrance, presence and exit of contract employers and contract employees in covered process areas. 4. Periodically evaluate the performance of contract employers in fulfilling their obligations as specified in paragraph (h)(3) of the regulation. 5. Maintain a contract employee illness and injury log.
Incorporated by Reference	29 C.F.R. 1910.252(a) Fire Prevention and Protection (Hot Work Permit) 29 C.F.R. 1910.38(a) Emergency Action Plan
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.38 Employee Emergency Plans/Fire Protection 29 C.F.R. 1910.120 Hazardous Waste Operations and Emergency Response 29 C.F.R. 1910.146 Permit-Required Confined Spaces 58 Fed. Reg. 4462 (1/14/93) 29 C.F.R. 1910.147 The Control of Hazardous Energy (Lockout/Tagout) 29 C.F.R. 1910.156 Fire Brigades 29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Appendix D to 29 C.F.R. 1910.119 Company Process Operating Procedures and Safe Work Practices API Recommended Practice 2220, <i>Improving Owner and Contractor Safety Performance</i>, First Edition, September 1991 API Recommended Practice 750, <i>Management of Process Hazards</i>, First Edition, January 1990 OSHA Publication 3132, <i>Process Safety Management</i>, 1992 OSHA Publication 3133, <i>Process Safety Management Guidelines for Compliance</i>, 1992 OSHA Instruction CPL 2-2.45A, <i>Process Safety Management of Highly Hazardous Chemicals—Compliance Guidelines and Enforcement Procedures</i>, September 1992 CMA Operations Training Guide for Process Safety

Subject	Permit-Required Confined Space
Regulatory Reference	58 Fed. Reg. 4549, 4553 (1993) (To be codified at 29 C.F.R. 1910.146)
Who Must Be Trained	All affected employees whose work is regulated by this section (e.g., authorized entrants, attendants, entry supervisors and rescue personnel).
Frequency of Training	Training must be provided to affected employees: 1. Before employee is first assigned duties under this section; 2. Before there is a change in assigned duties; 3. Whenever there is a change in permit space operations that presents hazards about which an employee has not already been trained; 4. Whenever the employer has reason to believe that: a. There are deviations from the permit space entry procedures required by (d)(3) of the standard; or b. That there are inadequacies in the employee's knowledge of the procedures; and 5. Rescue personnel must practice making permit space rescues once every 12 months.
Content Overview	Employer must provide training so that regulated employees acquire the knowledge, understanding and skills necessary for the safe performance of duties. Training must establish proficiency in duties as described below: Employer responsibility varies depending on the category of personnel. 1. <i>Authorized Entrants</i> Employers must ensure that authorized entrants: a. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure; b. Properly use equipment as required by paragraph (d)(4) of the standard; c. Communicate with the attendant to enable the attendant to monitor entrant status and alert entrants of the need to evacuate the space; d. Alert the attendant whenever the entrant i. Recognizes any warning sign or symptom of exposure to a dangerous situation, or ii. Detects a prohibited condition; and e. Exit from permit spaces as quickly as possible whenever: i. An attendant or supervisor gives an evacuation order, or ii. The entrant recognizes any warning sign; or, symptom of exposure to a dangerous situation, or iii. The entrant detects a prohibited condition, or iv. An evacuation alarm is activated. 2. <i>Authorized Attendants</i> Employers must ensure that authorized attendants: a. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms and consequences of exposure; b. Are aware of possible behavioral effects of hazard exposure in authorized entrants; c. Continuously maintain an accurate count of authorized entrants in the permit space and ensure that accurate means are used to identify entrants; d. Remain outside permit space during entry operations until relieved by another attendant;

- e. Communicate with authorized entrants to monitor entrant status and alert entrant if there is a need to evacuate the space;
 - f. Monitor activities inside and outside of the space to determine whether or not it is safe for entrants to remain;
 - g. Order entrants to evacuate the permit space under any of the following conditions:
 - i. Detection of a prohibited condition,
 - ii. Detection of a behavioral effect of hazardous exposure in an authorized entrant,
 - iii. Detection of a situation outside the space that could endanger the authorized entrants, and
 - iv. If the attendant cannot safely perform all required duties;
 - h. Summon rescue and other emergency services upon determination that authorized entrants may need assistance in escape from permit space;
 - i. Upon approach or entry of permit space by unauthorized persons:
 - i. Warn the persons that they must stay away from the permit space;
 - ii. Advise the persons who have entered the permit space that they must immediately exit; and
 - iii. Inform authorized entrants and the entry supervisor when unauthorized persons have entered the permit space;
 - j. Perform non-entry rescues according to employer's rescue procedure; and
 - k. Do not perform any duties that might interfere with attendant's primary duty to monitor and protect authorized entrants.
3. *Entry Supervisors*
Employers must ensure that each entry supervisor:
- a. Knows the hazards that may be faced during entry including information on the mode, signs or symptoms and consequences of exposure;
 - b. Verifies that the appropriate tests have been conducted and that the procedures and equipment specified in the permit are in place before endorsing the permit and allowing entry;
 - c. Terminates entry and cancels permit when:
 - i. Entry operations covered by the permit have been completed, or
 - ii. A condition that is not allowed under the entry permit arises in or near the permit space;
 - d. Verifies that rescue services are available and the means for summoning them are operable;
 - e. Removes unauthorized individuals who enter or attempt to enter permit space during entry operations; and
 - f. Determines that entry operations remain consistent with terms of entry permit and acceptable entry conditions are maintained.
4. *Rescue and Emergency Personnel*
The following requirements apply to employers who have employees enter permit spaces to perform rescue services:
- a. Employer must ensure that rescue personnel are provided with, and trained to properly use, personal protective equipment and rescue equipment needed to make rescues from permit spaces;
 - b. Each member of the rescue service must be trained to perform assigned rescue duties. Rescue personnel must also receive the training required for authorized entrants;
 - c. Rescue personnel must practice making permit space rescues at least once every 12 months, as detailed in subsection 29 C.F.R. 1910.146(k)(iii);
 - d. Rescue personnel must be trained in basic first aid and CPR; and
 - e. Section (k)(2) outlines separate requirements for employers arranging for non-employees to perform rescue services.

Suggested Training Objectives	Upon successful completion of training, the affected employees will be informed as to: 1. The difference between permit-required confined spaces and non-permit-required confined spaces; 2. Permit-required confined space entry procedures, including duties of each individual and/or team; 3. The hazards that may be faced during entry, including information on mode, signs or symptoms and consequences of exposure; and 4. What equipment is to be used for permit-required confined space entry and demonstrate its use, including PPE, ventilation devices, atmospheric test/monitoring devices, etc. For <i>Authorized Entrants</i>: 1. Proper use of equipment; and 2. Conditions and procedures to be followed in the event of an emergency requiring exit from the space. For <i>Attendants</i>: 1. The activities one should perform in monitoring the conditions of the space and the entrants; 2. The conditions for ordering the evacuation of the space and how to summon rescue services; and 3. How to perform non-entry rescues. For <i>Entry Supervisors</i>: 1. The appropriate tests and monitoring requirements; 2. Acceptable and prohibited conditions for entry; and 3. Proper permitting and entry procedures. For employees used as <i>Rescue Personnel</i>: 1. Perform the duties of the authorized entrant; 2. First-aid, including CPR skills; and 3. Rescue operations during simulated drills. <i>NOTE:</i> All employees whose work is regulated by this section shall after successful completion of training be certified as follows: 1. Employee's name; 2. Signature or initials of trainers; and 3. Dates of training.
Incorporated by Reference	29 C.F.R. 1910.147 Control of Hazardous Energy 29 C.F.R. 1910.1200 Hazard Communication 29 C.F.R. 1910.Subpart Z—Toxic and Hazardous Substances 29 C.F.R. 1910.1028 Benzene
Other Regulations with Similar Training/Information Provisions	None
Other Resources	ANSI Z117.1 1989, <i>Safety Requirements for Confined Spaces</i> API 2217, <i>Guidelines for Confined Space Work in the Petroleum Industry</i> API 2217A, <i>Guidelines for Work in Inert Confined Spaces in the Petroleum Industry</i> NIOSH Publication 87-113, <i>Guide to Safety in Confined Spaces</i> Company Resources

Subject	Control of Hazardous Energy (Lockout/Tagout)
Regulatory Reference	29 C.F.R. 1910.147(c)(7)
Who Must Be Trained	Different training requirements for “authorized employee”—a person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. “Affected employee”—an employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lock-out or tagout or whose job requires him/her to work in an area where such activities are being performed. An affected employee becomes an “authorized employee” when his/her duties include performing servicing or maintenance covered by the regulations. “Other employees”—those whose work operations are or may be in an area where energy control procedures may be utilized.
Frequency of Training	Initially, with retraining for affected and authorized employees required: 1. Whenever there is a change in job assignments, a change in machine equipment or processes that present a new hazard or when there is a change in the energy control procedures; or, 2. Whenever a periodic inspection reveals or employer has reason to believe that there are deviations from or inadequacies in employee’s knowledge or use of energy control procedures.
Content Overview	Training shall cover the following: 1. Authorized employees shall be trained in recognition of applicable hazardous energy sources, the types and magnitudes of the energy available in the workplace, and the methods and means necessary for energy isolation and control; 2. Affected employees shall be instructed in the purpose and use of the energy control procedures; 3. Other employees shall be instructed about the procedure and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out; 4. When tagout systems are used, training shall include information on the purpose, function, and limitations of tags; materials of which tags and their means of attachment may be made; need for legibility and understandability of tags by all affected employees; the need for secure attachment of tags to energy-isolating devices; and the necessity of authorization before removing tags. This section does not specify category of employee to be trained, it simply says “employees” shall be trained; and 5. Employer shall certify that employee training has been completed and is kept up to date. Certification shall include employee’s name and dates of training.
Suggested Training Objectives	Upon successful completion of training, authorized employees will be informed of the following: 1. The purpose of the standard and the hazards controlled. 2. When the standard applies. 3. The equipment used for lockout/tagout.

	4. The procedures for a. Shutdown, isolation and blocking; b. Notification of affected employees; c. Release of stored energy; d. Testing to verify effectiveness and energy control; e. Release from lockout/tagout; and f. Release if employee who applied device is no longer at facility. 5. Special procedures for a. Use of tags; b. Shift and personnel changes; c. Group lockout/tagout; d. Turnarounds; e. Inspection program; and f. Communication and reporting of problems. Affected employees will understand: 1. Knowledge and skills required for safe application, usage and removal of energy controls; and 2. The purpose and function of the energy control program.
Incorporated by Reference	29 C.F.R. 1910.145 Specifications for Accident Prevention Signs and Tags 29 C.F.R. 1910.331–335 Electrical Safe Work Practices 29 C.F.R. 1910 Subpart S—Electrical
Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1910.1200 Hazard Communication
Other Resources	Company Procedures OSHA Instruction CPL 2.85—29 C.F.R. 1910.147—<i>The Control of Hazardous Energy (Lockout/Tagout)—Inspection Procedures and Interpretive Guidance</i> OSHA Publication 3120, <i>Control of Hazardous Energy (Lockout/Tagout)</i> OSHA Model Lockout/Tagout Program API 2217, <i>Guidelines for Confined Space Work in the Petroleum Industry</i> API 2217A, <i>Guidelines for Work in Inert Confined Spaces in the Petroleum Industry</i>

Subject	Electric Power Generation, Transmission, and Distribution	
Regulatory Reference	29 C.F.R. 1910.269(a)(2)(i) through (vii)	
Who Must Be Trained	Employees who operate, maintain, or work with machinery/tools that may contact the equipment involved in electric power generation, transmission and distribution.	
Content Overview	Employee training shall consist of the safety related work practices, procedures, and other safety requirements that pertain to the employee's job assignment. Employees shall be trained and familiar with any safety practices including emergency procedures (i.e. man-hole rescue, pole top rescue, etc.) that are related to their work and safety. Qualified employees shall also be trained and competent in • the skills and techniques to distinguish live parts from other parts of electric equipment • the skills and techniques to determine the nominal voltage of exposed live parts • the minimum approach distances corresponding to the voltages to which an employee will be exposed • the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment.	
Suggested Training Objectives	1. The employer shall determine through regular supervision and through inspections conducted on at least an annual basis, that each employee is complying with the safety-related work practices, (1910.269(a)(2)(iii)). 2. Certain conditions may warrant additional training, (1910.269(a)(2)(iv)). 3. Training shall be of the classroom or on-the-job type, (1910.269(a)(2)(v)). 4. The training shall establish employee proficiency in the required work practices and shall introduce the procedures necessary for compliance, (1910.269(a)(2)(vi)). 5. The employer shall certify that the employee has received the training, (1910.269(a)(2)(vii)).	
Incorporated by Reference	29 C.F.R. 1910.146 Permit Required Confined Space 29 C.F.R. 1910.147 Control of Hazardous Energy Sources (Lockout/Tagout) 29 C.F.R. 1910.151 Medical Services and First Aid Subpart S Electrical 29 C.F.R. 1910.25-.26 Stairways and Ladders 29 C.F.R. 1910.38 Employee Emergency Plans and Fire Protection 29 C.F.R. 1910.67 Aerial Devices and Lifts 29 C.F.R. 1910.68 Manlifts 29 C.F.R. 1910.94 Ventilation 29 C.F.R. 1910.132-.138 Personal Protective Equipment: Eye and Face Protection, Respiratory Protection, Head Protection, Foot Protection, and Hand Protection 29 C.F.R. 1910.157 Portable Fire Extinguisher 29 C.F.R. 1910.178 Powered Industrial Trucks 29 C.F.R. 1910.179 Overhead and Gantry Cranes 29 C.F.R. 1910.268 Telecommunications 29 C.F.R. 1910.302-.308 Electrical Safety Requirements 29 C.F.R. 1910.332-.335 Electrical Safety Related Work Practices 29 C.F.R. 1910.1030 Bloodborne Pathogens 29 C.F.R. 1910.1200 Hazard Communication 29 C.F.R. 1926 Subpart M., Fall Protection	

Other Regulations with Similar Training/Information Provisions	29 C.F.R. 1926.302	Power Operated Hand Tools
	29 C.F.R. 1926.400-.417	Subpart K, Electrical Requirements
	29 C.F.R. 1926.651	General Protection Requirements Excavation
	29 C.F.R. 1926.950	General Requirements Power Transmission
	29 C.F.R. 1926.956	Underground Lines
	29 C.F.R. 1926.957	Construction in Energized Substations
	29 C.F.R. 1926.1060	Stairways and Ladders
Other Resources	Company Policies and Procedures	