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# Hazardous Materials Management

**Presented by.**

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Hazardous Waste Operations And  
Emergency Response  
(HAZWOPER)  
29 CFR 1910.120

# Scope

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- **Clean-up Operations At Uncontrolled Hazardous Waste Sites**
- **Certain Operations At Treatment, Storage And Disposal (TSD) Facilities**
- **Emergency Response Operations For The Release Or Substantial Threat Of A Release Of Hazardous Substances**

# Application

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- **Clean-up Operations Must Comply With All Paragraphs Of The Standard Except (P) And (Q)**
- **Operations At TSD Facilities Must Comply With Paragraph (P)**
- **Emergency Response Operations Not Covered As A Clean-up Operation Or TSD Facility Must Comply With Paragraph (Q)**

# Site Safety And Health Program

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- **An Organizational Structure For Site Operations Including Provision For A General Supervisor And A Site Safety And Health Supervisor**
- **A Comprehensive Work Plan**
- **A Site Specific Safety And Health Plan**

# Site Safety And Health Program *(continued)*

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- **Safety And Health Training Program**
- **Medical Surveillance Program**
- **Standard Operating Procedures For Safety And Health**
- **Any Necessary Interface Between The General Program And The Site Specific Activities**

# Site Characterization And Analysis

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- **Hazardous Waste Sites Shall Be Evaluated To Determine Appropriate Safety And Health Control Procedures**
- **Preliminary Evaluation Shall Be Performed Prior To Entry With A More Detailed Evaluation Immediately Upon Initial Entry**

# Site Characterization And Analysis *(continued)*

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- **PPE For Initial Entry Shall Provide Protection From Known Or Suspected Hazards**
- **If Hazards Or Suspected Hazards Are Not Identified During The Preliminary Evaluation, Level “B” Protection, As A Minimum, Shall Be Provided For Initial Entry**



# Site Control

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- **Site Control Shall Be Implemented Before Work Begins**
- **The Site Control Plan Shall Be Developed During The Planning Phases Of The Operation**

# Elements Of Site Control Plan

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- **Site Map**
- **Site Work Zones**
- **Use Of The Buddy System**
- **Site Communications And Alerting Procedures For Emergencies**
- **Standard Operating Procedures**
- **Identification Of Nearest Medical Assistance**

# Training

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- **Training Shall Be Provided For Site Workers, Supervisors And Managers**
- **Training Is Required Prior To Job Assignment**

# Required Training

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- **General Site Workers**

- 40 Hours Plus
- 3 Days Supervised Field Experience

- **Occasional Site Workers**

- 24 Hours
- 1 Day Supervised Field Experience

# Required Training *(continued)*

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- **Regular Workers In Areas Of Low Exposure**
  - 24 Hours
  - 1 Day Supervised Field Experience
- **Managers And Supervisors**
  - 40 Hours
  - 8 Hours Of Specialized Training
- **Eight Hours Annual Refresher Training**

# Medical Surveillance

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- **Certain Categories Of Employees**
- **Prior To:**
  - **Assignment**
  - **Periodically (Normally Annually)**
  - **Termination Or Reassignment**
- **If An Employee Shows Signs Or Symptoms**
  - **Overexposure**
  - **Injured**
  - **Becomes Ill Because Of Exposure**

# Physician's Written Opinion Shall Include

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- **Medical Conditions That Put The Employee At Increased Risk**
- **Recommended Limitations On Employee's Assignment**
- **Result Of Exam And Test If Requested By Employee**
- **Statement That Employee Has Been Notified Of Results**

# Engineering Controls And Work Practices

- **Engineering Controls And Work Practices Are The Preferred Means To Control Employee Exposures**
- **PPE May Be Used As An Element Of Protecting When Other Controls Are Not Feasible**
  - **PPE Shall Be Selected Based On The Hazards Likely To Be Encountered**
- **A Written PPE Program Is Required**



# PPE Program

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- **Selected Based Upon Site Hazards**
- **Use And Limitations**
- **Work Mission Duration**
- **Maintenance And Storage**
- **Decontamination And Disposal**
- **Training And Proper Fitting**

# PPE Program *(continued)*

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- **Donning And Doffing Procedures**
- **Inspection Procedures**
- **Program Evaluation**
- **Limitations That Result From Temperature Extremes (Heat Stress)**

# Monitoring

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- **Monitoring Conducted To Assure Proper Selection Of:**
  - **Engineering Controls**
  - **Work Practices**
  - **PPE**
- **Air Monitoring Conducted To Identify And Quantify Airborne Contaminants**
- **Program Must Include Initial Monitoring, Periodic Monitoring And Personal Monitoring Of Employees**

# Informational Programs

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- **Informational Programs Shall Be Developed To Inform Employees, Contractors And Subcontractors About The Nature, Level And Degree Of Exposures That Are Likely To Occur**

# Handling Drums And Containers

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- **General Requirements For Drum And Container Handling**
- **Procedures For Opening Drums And Containers**
- **Materials Handling Equipment**
- **Radioactive, Shock Sensitive And Lab Wastes**
- **Sampling Of Drums And Containers**
- **Shipping And Transporting**
- **Tanks And Vaults**

# Decontamination

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- **Decontamination Must Be Implemented Prior To Site Entry**
- **Standard Operating Procedures Must Be Developed To Minimize Contact With Hazardous Materials**
- **All Employees Leaving The Work Area Must Go Through Decontamination**

# Decontamination *(continued)*

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- **Site Safety Supervisor Must Monitor Effectiveness Of The Decontamination Procedures**
- **Equipment And PPE Must Be Decontaminated Or Disposed Of In A Proper Manner**
- **Regular Showers And Change Rooms Must Meet The Requirements Of The OSHA Sanitation Standard**

# Emergency Response At Hazardous Waste Sites

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- **A Written Emergency Response Plan Is Required**
- **Employers Who Will Evacuate All Personnel And Not Allow Them To Participate In Response Efforts Are Exempt From This Requirement But Must Prepare An Emergency Action Plan As Required By 29 CFR 1910.38**



# Elements Of The Emergency Response Plan

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- **Pre-emergency Planning**
- **Personnel Roles, Lines Of Authority And Communication**
- **Emergency Recognition And Prevention**
- **Safe Distances And Places Of Refuge**
- **Site Security And Control**
- **Evacuation Routes And Procedures**
- **Decontamination Procedures**

# Additional Elements Of The Plan

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- **Emergency Medical Treatment And First Aid**
- **Emergency Alerting And Response Procedures**
- **Critique Of Response And Follow-up**
- **PPE And Emergency Equipment**
- **Site Topography, Layout, And Prevailing Weather Conditions**
- **Procedures For Reporting Incidents To Governmental Agencies**

# Illumination

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- **Requirements For Minimum Level Of Illumination At Work Site**

# Sanitation At Temporary Workplaces

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- **Requirements For Potable And Non-potable Water Supplies**
- **Requirements For Toilet Facilities**
- **Requirements For Food Handling, Temporary Sleeping Quarters And Washing Facilities**
- **Showers And Change Rooms**

# New Technology Programs

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- **Employers Shall Implement Procedures For Introducing Effective New Technologies**
- **Employers Shall Evaluate New Technologies, Equipment And Control Methods**

# TSD Facilities

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- **Written Safety And Health Program**
- **Hazard Communication Program**
- **Medical Surveillance Program Meeting Requirements Of Paragraph (F)**
- **Decontamination Program Meeting Requirements Of Paragraph (K)**

# TSD Facilities *(continued)*

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- **New Technology Program Meeting Requirements Of Paragraph (O)**
- **Materials Handling Program For Drums And Containers**
- **Training Program (24 Hours For New Employees And 8 Hours Annual Refresher)**
- **Emergency Response Program**

# Elements Of The Emergency Plan For TSD Facilities

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- **Pre-emergency Planning And Coordination With Outside Parties**
- **Personnel Roles And Lines Of Authority And Communication**
- **Emergency Recognition And Prevention**
- **Safe Distances And Places Of Refuge**
- **Site Security And Control**
- **Evacuation Routes And Procedures**
- **Decontamination Procedures**



# Additional Elements Of The Plan

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- **Emergency Medical Treatment And First Aid**
- **Emergency Alerting And Response Procedures**
- **Critique Of Response And Follow-up**
- **PPE And Emergency Equipment**
- **Site Topography, Layout, And Prevailing Weather Conditions**
- **Procedures For Reporting Incidents To Governmental Agencies**

# Emergency Response To Hazardous Substance Release

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- **Emergency Response Plans Are Required Except Where Employers Will Evacuate Their Employees**
- **Procedures For Handling An Emergency Response Incident**
- **Personnel And Levels Of Training**
- **Trainer Qualifications**

# Emergency Response *(continued)*

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- **Refresher Training Requirements**
- **Medical Surveillance Program That Complies With Paragraph (F)**
- **Chemical Protective Clothing Requirements**
- **Post-emergency Response Operations**

# Elements Of The Emergency Plan

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- **Pre-emergency Planning And Coordination With Outside Parties**
- **Personnel Roles And Lines Of Authority And Communication**
- **Emergency Recognition And Prevention**
- **Safe Distances And Places Of Refuge**
- **Site Security And Control**
- **Evacuation Routes And Procedures**

# Elements Of The Emergency Plan

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- **Decontamination Procedures**
- **Emergency Medical Treatment And First Aid**
- **Emergency Alerting And Response Procedures**
- **Critique Of Response And Follow-up**
- **PPE And Emergency Equipment**
- **Emergency Response Organizations May Use Local Or State Plans As Part Of Their Plan To Avoid Duplication**

# Response Personnel And Training Requirements

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- **Skilled Support Personnel**
- **Specialist Employees**
- **First Responder Awareness Level**
- **First Responder Operations Level**
  - **Minimum Of 8 Hours Training To The Awareness Level**
  - **Competencies For Operations Level**

# Response Personnel And Training Requirements

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## ■ Hazardous Materials Technician

- Minimum Of 24 Hours Training To The Operations Level
- Competencies For Technician Level

## ■ Hazardous Materials Specialist

- Minimum Of 24 Hours Training To The Technician Level
- Competencies For The Specialist Level

## ■ Incident Commander

- Minimum 24 Hours Training To The Operations Level
- Competencies For The Incident Commander

# Appendices

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- **Appendix A - Personal Protective Equipment Test Methods**
- **Appendix B - General Description And Discussion Of The Levels Of Protection And Protective Gear**
- **Appendix C - Compliance Guidelines**
- **Appendix D - References**
- **Appendix E - Training Curriculum Guidelines**



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Hazard Communication  
Standard  
29 CFR 1910.1200

# Purpose

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- **Make sure that the hazards of all chemicals are evaluated**
- **Make sure that the information is conveyed to employees by means of a comprehensive hazard communication program**

# Scope

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- **Applies to “hazardous” chemicals known to be present in the workplace**
- **Does not apply to hazardous waste, tobacco products, articles, food, drugs, cosmetics or alcoholic beverages**
- **Does not apply to consumer products used in the workplace for the purpose intended by the manufacturer where the use does not result in exposures greater than those anticipated for consumers**

# Hazard Evaluation

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- **Manufacturers or importers must assess the hazards of chemicals that they produce or import**

# Major Elements of a Hazard Communication Program

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- **Chemical inventory**
- **Product warning labels**
- **Material safety data sheets**
- **Written hazard communication program**
- **Employee training**

# Chemical Inventory

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- **Must include all hazardous materials known to be present in the workplace**

# Labeling

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- **All labels must contain the name of the product as it appears on the MSDS and the applicable hazard warnings**
- **Products shipped from one workplace to another must contain manufacturer or supplier information**

# Material Safety Data Sheets (MSDS)

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- Provides detailed information on chemical properties, hazards and protective measures
- Required for all hazardous chemicals
- Must be readily available to employees



# MSDS Contents

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- **Product identity**
- **Physical and chemical characteristics**
- **Physical hazards of the chemical**
- **Health hazards of the chemical**
- **Primary routes of entry**
- **Exposure limits**
- **Whether the chemical is listed as a carcinogen**
- **Precautions for safe handling and use**
- **Applicable control measures including PPE**
- **Emergency and first aid procedures**

# Trade Secret

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- Hazardous ingredients should be listed on the MSDS unless the manufacturer claims the specific composition as a “trade secret”
- Trade secret information must be disclosed to medical personnel in the event of an emergency

# Written Program Elements

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- **Procedures for complying with the requirements for labeling and other forms of warning**
- **Procedures for complying with the requirements for MSDS's**
- **Procedures for informing employees about the hazards of non-routine tasks**
- **Procedures for warning employees about the hazards from unlabeled pipes**
- **Chemical inventory**
- **Methods for informing contractors about hazards in the workplace**

# Health Hazards

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- Toxic
- Highly toxic
- Corrosive
- Irritant
- Carcinogen
- Reproductive toxins
- Target organ effects
- Sensitizers

# Physical Hazards

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- **Combustible liquid**
- **Flammable liquid or solid**
- **Flammable gas**
- **Compressed gas**
- **Explosive**
- **Organic peroxide**
- **Unstable**
- **Water reactive**
- **Phyrophoric**
- **Oxidizer**

# Training Elements

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- **The hazard communication standard**
- **Operations where hazardous chemicals are present**
- **Location and availability of the chemical inventory**
- **Location and availability of the written program**
- **Location and availability of MSDS's**

# Training Elements *(continued)*

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- **Explanation of labeling system**
- **Methods of detecting the presence or release of a hazardous chemical**
- **Physical and health hazards of chemicals in the workplace**
- **Specific measures of protection including PPE**
- **Specific elements of the written plan**