ATOE-2680: HAZARDOUS MATERIAL HANDLING AND FIELD SAFETY

Cuyahoga Community College

Viewing: ATOE-2680 : Hazardous Material Handling and Field Safety

Board of Trustees:
2001-03-22

Academic Term:
Spring 2019

Subject Code
ATOE - Appd Ind Tech-Operating Engin.

Course Number:
2680

Title:
Hazardous Material Handling and Field Safety

Catalog Description:
Introduction to governmental laws and agencies involving worker's health and safety protection. In-depth study of hazardous waste and emergency response operations, including the formation of Occupational Safety and Health Administration (OSHA). Regulations pertaining to specific rights to Code of Federal Regulations - OSHA 29 CFR 1910.120 (The Access to Exposure and Medical Records Standard), and decontamination procedures. Includes advanced concepts in informational programs, heat and cold stress, normal cooling mechanisms, heat-related illnesses, identifying signs of heat and cold stress and their prevention, diesel exhaust risks, asphalt emissions, Respiratory Standard Act 1910.134 and respiratory protection.

Credit Hour(s):
2

Lecture Hour(s):
2

Lab Hour(s):
0

Requisites

Prerequisite and Corequisite
ATOE-1100 Operating Engineering Concepts, and ATOE-1650 Graders and Plans; or departmental approval.

Outcomes

Course Outcome(s):
N/A

Objective(s):
1. 1. Identify the legislation and the formation of OSHA.
2. 2. Explain what is 29 CFR 1910.120.
3. 3. Explain and recognize the safety and health practices outlined in 29 CFR 1910.120 and apply them when working at any hazardous waste site.
4. 4. Describe the purpose for the appendices to the standard of the Code of Federal Regulations.
5. 5. Explain and identify the location of where this standard can be in the Code of Federal Regulations.
6. 6. List the order of priorities for OSHA inspections.
7. 7. Discuss and explain the primary duties of OSHA.
8. 8. Identify and explain heat and cold related illnesses and their prevention.
9. 9. Demonstrate manager-employee responsibilities.
10. 10. Discuss diesel exhaust health risks.
11. 11. Explain asphalt fumes prevention.
12. 12. Identify and explain respiratory protection and prevention.

Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation

Course Content Outline:

1. Government agencies and legislation
    a. Walsh-Healy Act
    b. Williams-Steiger Act (1970)(a.k.a. Occupational Safety and Health Act of 1970)
    c. OSHA (Occupational Safety and Health Act) to OSHA (Occupational Safety and Health Administration-"Federal OSHA.")
        i. OSH Act empowers OSHA
        ii. development of new standards from OSHA
        iii. Congress gives OSHA power to administer safety and health laws
            1. statutory laws
            2. administrative laws
2. Standard 29 CFR 1910.120
    a. Official name for OSHA Hazardous Waste Standard
    b. Interim final rule (March 16, 1987)
    c. Final rule (March 16, 1990)
        i. the importance of 29 cfr 1910.120
            1. is the law for all hazardous waste handling in USA
            2. requires training in safety and health practices
            3. institutes safe practices for handling toxic wastes
            4. uniforms rules into job planning and bidding
            5. makes information available to employees
            6. contains an emergency response plan
            7. enforceable by OSHA to protect employees
    d. Definition of hazardous substance
3. Location of OSHA standards-and how they can be found
    a. Code of Federal Regulations (CFR)
    b. Code divided into 50 titles
    c. Labor Department rules-Title 29
    d. Title 29-OSHA standards and regulation
    e. OSHA standards for general industry are found in 29CFR1910
    f. 1910 a.k.a. "part 1910" holds OSHA"s general industry standards
    g. OSHA construction standards found in 29 CFR 1926
4. Order of priorities
    a. First priority-imminent danger
    b. Second priority-catastrophes/fatal accidents
    c. Third priority-formal employee complaints
    d. Fourth priority-programmed inspections; OSHA initiated inspections
5. OSHA regulations concerning specific rights
6. Potential hazards and medical monitoring
7. Cold and heat stress illnesses
    a. Heat illnesses-how the body loses heat
        i. radiation
        ii. conduction
        iii. convection
        iv. evaporation
    b. Hypothermia
        i. causes
            1. cold temperatures
            2. improper clothing and equipment
            3. wetness
            4. alcohol intake
            5. fatigue, exhaustion

6. dehydration
7. hunger

ii. mild hypothermia
iii. moderate hypothermia
iv. severe hypothermia

c. Cold injuries
i. causes-factors contributing
1. exposed skin
2. low air temperatures, wind chill
3. contact with metal or super-cooled liquid (white gas)
4. dehydration
5. hunger
6. diabetes

ii. trench foot
iii. eye injuries

d. Employer/manager"s responsibilities
e. Diesel exhaust health risks
i. effects of diesel exhaust in the human body
f. Asphalt emissions
i. the HMA industry
ii. reducing exposures to asphalt fumes during operations
g. Respiratory Protection Act-1910.134
i. general requirements
ii. OSHA regulations (standards-29 CFR 1910.134 mandatory)

8. Respiratory usage and protection
a. Selection of respiratory equipment
b. Training use of respiratory
c. Methods of cleaning and sanitizing
d. Inspection procedures
e. Storage or respirators
f. Evaluation
g. Medical surveillance

9. Respiratory procedures
a. Fit test methods
b. Negative-positive pressure fit checks
c. Quantitative fit test

10. International hand and arm signals

Resources

International Union of Operating Engineers, Local #18--Apprenticeship and Training. "Hazmat Training for Operating Engineers"

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