

# Module 2

## Safety

*A: Regulatory/Procedural/Security*

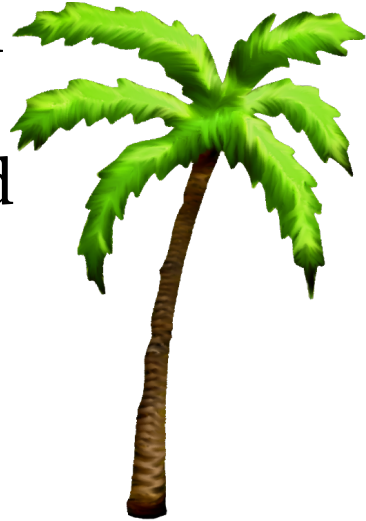
# Electrical Hazards

Overview from ELT 101 Unit 1 (slides 12-20)

# Regulations

When we think about safety regulations, we usually think about regulations that protect a worker's physical safety. It is important to remember that safety regulations and standards not only address the physical elements of workplace safety, but they also address the safety and security of

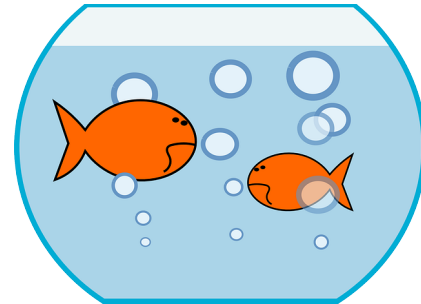
- information
- the environment
- the community in general



# Clean Water Act vs Clean Air Act

- Water quality standards
- System of minimum effluent standards for each industry
- Discharge permit program (translates standards into enforceable limits)
- Provisions for special problems
- Construction loan program for publicly-owned treatment works

- Regulation of hazardous air pollutants
- Reductions in power plant emissions for control of acid rain
- Operating permit program
- Stratospheric ozone protection
- Enforcement power and penalties



# Clean Air Power Initiative

The Air Power Initiative (CAPI) was created to improve air pollution control efforts within the electric power generating industry.



# Hazardous Materials Transportation Act

- Procedures and Policies
- Material Designations
- Packaging Requirements
- Operational Rules.



# Atomic Energy Act

The Atomic Energy Act (AEA) is a federal law that was passed to regulate the proper management of nuclear materials and nuclear facilities.



# Emergency Planning and Right to Know Act

- Rights for members of the public and local governments to obtain information concerning potential hazardous substance threats in their communities.
- Establishment of mechanisms to enable states and communities to prepare to respond to unplanned releases of hazardous substances.



# Occupational Safety and Health Administration

Mission: To save lives, prevent injuries, and protect the health of American Workers. To accomplish this, federal and state governments must work together in partnership with the more than 100 million working men and women and their six and a half million employers who are covered by the Occupational Health and Safety Act of 1970.

# Employer Responsibility

Under the OSH Act, employers have a general duty to provide employees with a place of employment that is free from recognized hazards that can cause death or serious physical harm, and to comply with all OSHA standards, rules, and regulations.

# OSHA Rights, Employees

- Receive training from your employer as required by OSHA standards
- Request information from your employer about OSHA standards, worker injuries and illnesses, job hazards, and workers' rights
- Request action from your employer to correct hazards or violations

## OSHA Rights, Employees (cont.)

- File a complaint with OSHA if you believe that there are either violations of OSHA standards or serious workplace hazards
- Be involved in OSHA's inspection of your workplace
- Find out the results of an OSHA inspection

# OSHA Rights, Employers

- Receive compliance assistance from OSHA
- Be involved in OSHA's inspection of your workplace
- Find out the results of an OSHA inspection

# U.S. Department of Labor

**Mission:** To foster, promote, and develop the welfare of the wage earners, job seekers, and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and ensure work-related benefits and rights.

# U.S. Bureau of Labor Statistics

**Mission:** To collect, analyze, and disseminate essential economic information to support public and private decision-making. As an independent statistical agency, BLS serves its diverse user communities by providing products and services that are objective, timely, accurate, and relevant.

# National Institute for Occupational Safety and Health



Mission: To generate new knowledge in the field of occupational safety and health and to transfer that knowledge into practice for the betterment of workers.



# U.S. Department of Transportation

**Mission:** To serve the United States by ensuring a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future.



# U.S. Environmental Protection Agency

Mission: To protect human health and safeguard the natural environment.



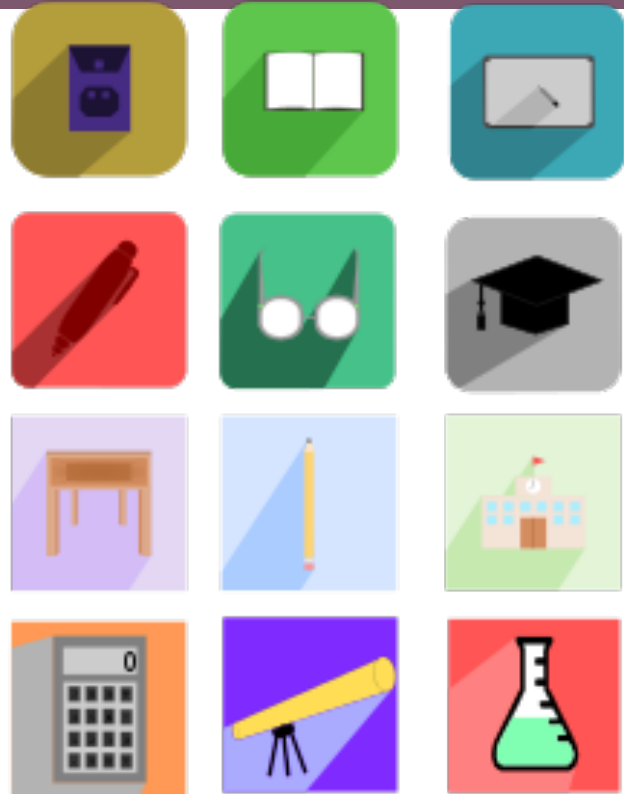
# National Fire Protection Association

(NFPA 70) National Electric Code: A U.S. standard for the safe installation of electrical wiring and equipment.

(NFPA 70E) Standard for Electrical Safety in the Workplace: A standard for electrical safety requirements for employees.



# National Safety Council



Mission: Saves lives by preventing injuries and deaths at work, in homes and communities, and on the roads, through leadership, research, education, and advocacy.

# American Society of Safety Engineers

Members manage, supervise, and consult on safety, health, and environmental issues in industry, insurance, government, and education.



# U.S. Nuclear Regulatory Commission

**Mission:** The Commission as a collegial body formulates policies, develops regulations governing nuclear reactor and nuclear material safety, issues orders to licensees, and adjudicates legal matters.



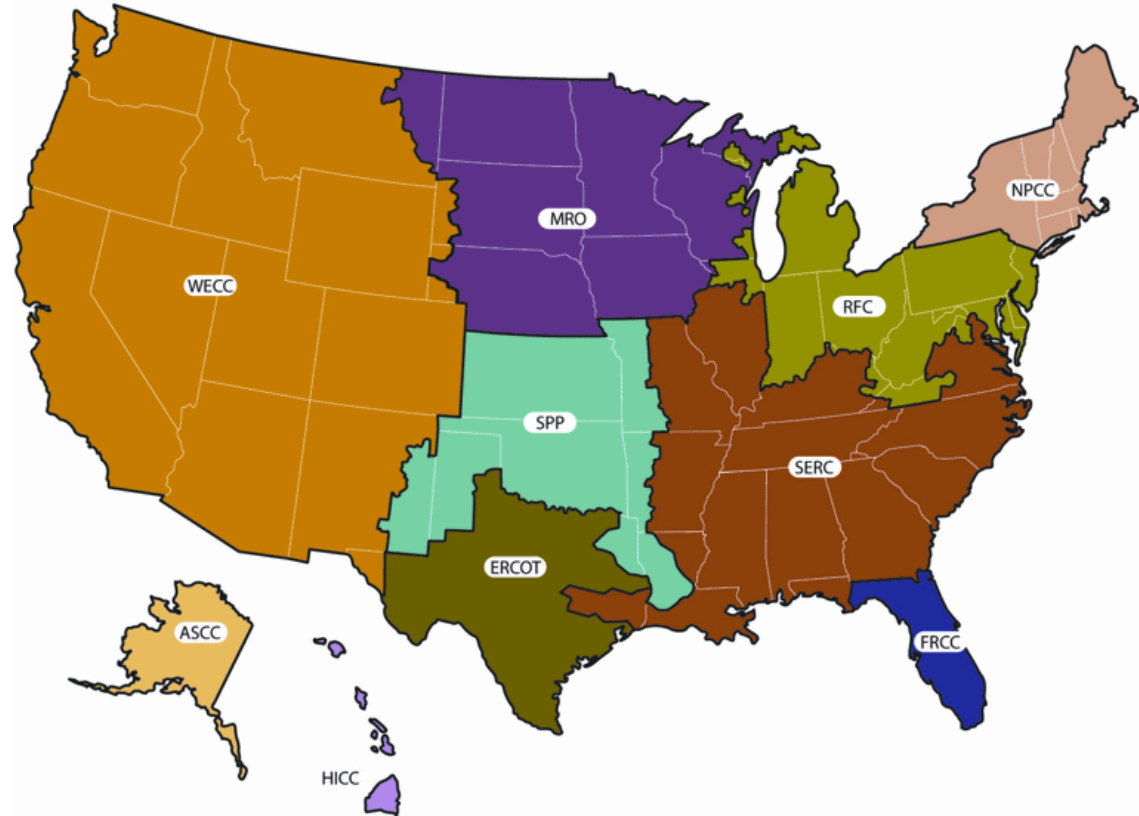
# U.S. Department of Homeland Security

**Mission:** To lead the unified national effort to secure the country and preserve our freedoms.

While the Department was created to secure our country against those who seek to disrupt the American way of life, our charter also includes preparation for and response to all hazards and disasters.

# North American Electric Reliability Corporation

Mission: To ensure the reliability of the North American bulk power system. Develops and enforces reliability standards; monitors the bulk power system; and educates, trains, and certifies industry personnel.





# U.S. Office of Health, Safety and Security

**Mission:** Responsible for health, safety, environment, and security; providing corporate-level leadership and strategic vision to coordinate and integrate these vital programs.

HSS is responsible for policy development and technical assistance; safety analysis; corporate safety and security programs; education and training; complex-wide independent oversight; and enforcement.

# Procedures

Safety procedures can range from company mission statements and industry “best practices” to complex hazard communication directives and legal procedures.



# Safety Documentation

A safety plan is a document that describes the process for identifying the physical and health hazards that could harm workers, procedures to prevent accidents, and steps to take when accidents occur.

Employee handbooks are an excellent way to provide written documentation regarding company safety and health policies and procedures in addition to general employment policies.

## Safety Documentation (cont.)

The OSH Act mandates that appropriate documentation procedures be followed in the workplace such as recordkeeping and reporting.

The creation of a safety policy, mission, or statement can become a guiding principle for all levels of employees and management of the fundamental safety beliefs and policies of the company.

# Safety Training

Training sources:

- OSHA
- Utility companies
- Trade unions
- Trade associations
- Industry alliances/agencies
- Private training companies



# Safety Training (cont.)

Training should be provided:

- To all new employees before they begin working
- To all existing employees at least once a year
- When new equipment, materials, or processes are integrated
- When procedures have been updated or revised

# Key Components of Employee Safety Training

- Mandatory attendance for all employees
- Addresses the safety and health responsibilities of all personnel
- Comprehensive to ensure coverage of all pertinent material

# Key Components of Employee Safety Training (cont.)

- Hands-on, pragmatic exercises to replicate authentic tasks and environments
- Ensures that all employees understand the hazards to which they may be exposed
- Ensures that all employees know how to prevent harm to themselves and others



# Employee Health and Wellness Programs

Health and wellness programs promote healthy and safe lifestyles both on and off the job.

Healthy employees:

- better work attendance
- are more likely to have better morale
- are more productive



# LO/TO/TO

Lockout/Try out/Tag out!

LO/TO/TO procedures are created to prevent the unexpected energization or startup of the machines or equipment that would result in the release of energy that could cause serious injury to employees.



# Personal Protective Equipment

**PERSONAL PROTECTIVE EQUIPMENT (PPE)** refers to items worn by a worker to provide protection from hazards.

For employees working on structures such as poles, towers or other equipment that supports overhead generation, transmission, and distribution lines and equipment, OSHA requires fall protection precautions.



# Ergonomics

Dictionary definition: the study of people's efficiency in their working environment

OSHA definition: fitting a job to a person

## Ergonomics (cont.)

Employees should be trained in and utilize good ergonomics and body mechanics, such as safe lifting procedures, in completing all duties to prevent musculoskeletal disorders and cumulative trauma.

Special safety protocols must be followed when working in confined spaces such as manholes or vaults.

# HazCom...

- Includes requirements for container labeling, material safety data sheets, and appropriate training opportunities



**Oxidizing**

This symbol informs people that this substance produces oxygen when burned. This specific reaction creates a high problem for combustion and has to be stored in special containers and must be transported with extreme care.



**Biohazardous**

This symbol is often found in hospitals and is put on products that have materials that are harmful, such as viruses or bacteria. Examples of bacteria that fall into this category are Ebola and the flesh eating disease.



**Corrosive**

This symbol is the second most common symbol found in homes across North America. This symbol is most commonly found on products such as bleach and battery acid, which are highly corrosive and are able to burn organic matter.



**Poisonous & Infectious**

This symbol belongs to class D-I and is one of the most commonly found symbols in homes across North America. This symbol represents materials that are toxic when ingested. This category includes such common products as bleach and laundry detergent. Most household chemicals and cleaners contain this symbol and has become known as the symbol for poison.



**Flammable & Combustible**

This symbol is for flammable and combustible material, which is in class B and tells a person that certain substances will react with a flame and burn. Some materials that fit into this category are gas and oil. These substances are highly flammable and ignite with little effort.

# HazCom...

- Includes communicating risks of powerful electrical energy associated with work performed on systems utilized in the energy and utilities industries



# HazCom...



- Job briefings, which coordinate and communicate employees' responsibilities and safety concerns in specific job situations





# Security

Security in the Energy Industry includes employee security, site/work location security, as well as information security.

# Natural Gas Safety

A harmless but pungent **odorizer** called mercaptan is added to natural gas as a safety precaution to help identify gas leaks