Environmental Management



Key Takeaways:

– Understanding what environmental management is and why it is important.
– Learning about the types of industrial pollutants and the hazards they present to public health and the environment.
– Understanding what industrial facility employees and management can to do prepare for and respond to environmental emergencies.

Course Description

This course will teach about the industrial sources of land, air, and water pollution, the health dangers that environmental pollutants present, and the types of actions industrial facility workers must complete to control industrial pollutants and respond to environmental incidents.

The EPA states that “[h]azardous waste is waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes.”

Only recently has there been a growing awareness of the dangerous side effects of hazardous waste contamination. Years ago, numerous industrial plants discharged heavy metals and unstable organic compounds directly into streams or injected them into the earth’s subsurface through wells, killing populations with close proximity to these toxic sites.

Due to agricultural applications, nitrates, phosphates, and synthetic organic compounds in pesticides and fertilizers have made their way into streams and ground water. The atomic age created radionuclide contamination from man-made sources, like nuclear power plants.

There are many physical forms of hazardous waste, such as solids, semi-solids, liquids, and gases. In addition, hazardous waste includes spent solvents and many pesticides and excess, discarded, or spilled chemicals.

There are many reasons why hazardous waste continues to be affect our environment:
– It does not easily break down naturally and stays intact for anywhere from a few years to a few millenia;
– It can be travel through the air, water, soils, and sediments;
– It can be transferred from one organism to another, trhough consumption or

decomposition.

Heavy metals and toxic chemicals have such an influence on our bodies that the World Health Organization (WHO) and the National Cancer Institute estimate they cause between 60 and 90 percent of all cancers.

Additional chronic health effects from waste contaminants include stroke, kidney and thyroid disease, cardiovascular damage, nervous disorders, and impairment of speech, hearing, vision, and memory.

In light of these effects, hazardous wastes are regulated to:
– Guarantee safe treatment, storage, transportation, and disposal;
– Prohibit the generation of hazardous waste through pollution prevention;
– Minmize the amount of any hazardous substance, pollutant, or contaminant released into the environment.

Technologies for hazardous waste treatment can include:
– Distillation
– Stabilization
– Neutralization
– Incineration
– Evaporation

Prevent the creation of hazardous wastes by:
– Modifying processes (avoid the need for the hazardous material).
– Substituting products (purchase the least toxic substance available).
– Reducing product purchase (purchase minimum quantity and in small containers initially).

Safe Waste Management Practices:
– Organize waste materials in their properly designated containers.
– Cover chemical containers.
– Label containers.
– Keep chemicals out of the weather.
– Carry out the guidelines for proper management, handling, and disposal of hazardous wastes or “unknowns”.
– Notify your company’s Environmental or Health, Fire, & Safety Departments of all chemical spills.
– Throw out aerosol cans in a manner approved by state or local regulations (these normally incorporate provisions for capturing and safe disposal of any remaining container contents and disposal of the empty aerosol cans).
– Always drain used oil filters and place in the marked container.
– Place all used oil in bulk used oil containers.
– Do not leave lids off of oil funnels, solvent containers, or other waste containers.
– Do not place full or partially full aerosol cans in trash containers.
– Do not place waste streams in improper, unlabeled containers.
– Never storing chemical containers on bare ground.
– Always store chemical containers inside and on paved surfaces.
– Carry out the spill release reporting guidelines for chemical releases and spills.
– When you have general waste management issues or questions, contact your company’s Environmental Department personnel for direction.

Precautions
– Ensure that there are procedures for proper response to an accidental spill or release in place.
– Keep emergency response supplies and equipment be on hand.

– Clearly identify waste receptacles for the types of waste.

Whenever you discover a hazardous material spill or release at work:
– Promptly report it to your manager, supervisor, building administrator, or company environmental organization.
– Immediately call your company’s emergency number if it is life threatening or immediately hazardous.