Forms of Hazardous Energy

**Mechanical Energy** (also known as *kinetic energy*) refers to the actual movement of equipment components or materials.

**Stored Energy** (also known as *potential energy*) can be released as mechanical (kinetic) energy if it is not properly controlled. There are several types of stored energy that are common, including:

- **The potential for gravity** or other mechanical movement
  - Suspended, elevated or coiled materials
  - Springs, which can be under tension or compression
- **Fluids under pressure** – includes gases or liquids, such as these:
  - Pressure vessels
  - Gas tanks
  - Hydraulic systems
  - Pneumatic systems
  - Steam lines
  - Chemical piping

Stored energy can be handled in several ways:

- **Items subject to gravity** or mechanical movement can be either blocked or released.
- **Fluids under pressure** can be blocked, dissipated or released.
  - But *don’t* release them directly into the atmosphere if they are toxic, flammable or explosive substances.

**Electrical Energy** can occur in a number of forms, such as:

- Electrical power
- Static electricity
- Electrical storage devices
- Batteries
- Capacitors – store electrical energy: they must be discharged before work begins.

**Thermal Energy** can occur in high or low temperature systems. Some of the sources of thermal energy include:

- Heated water
- Steam
- Mechanical work
- Radiation
  - Non-ionizing radiation, such as: lights, lasers, microwaves
  - Ionizing radiation, such as: X-rays
- Chemical reaction
- Electrical resistance

**Combinations** of many of the above forms of energy are common in industrial equipment.

**SOURCES:**
- Searching for the Switch to Locking Out
  - Canadian Auto Workers Union.
- Preventing Worker Deaths from Uncontrolled Release of Electrical, Mechanical and Other Types of Hazardous Energy