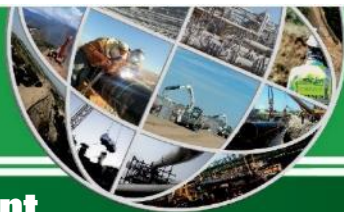


# LESSON LEARNT



PREPARED BY: Corporate QHSE Dept.

N° 10/2022 Date: October 2022

OBJECT ENERGY WHEEL

## THE HAZARD RECOGNITION AND ENERGY WHEEL

Hazard recognition is a fundamental skill required for nearly every safety activity. Research has shown that work crews typically identify and discuss less than half of the hazards that they actually encounter. Field research has revealed that work crews are very adept at recognizing hazards associated with gravity and motion like falls from height, suspended loads, uneven work surfaces, and mobile equipment. However, hazards associated with other forms of energy like tension, compression, chemical, temperature, and radiation are more commonly missed. These trends transcend industry, trade, age, and level of experience.

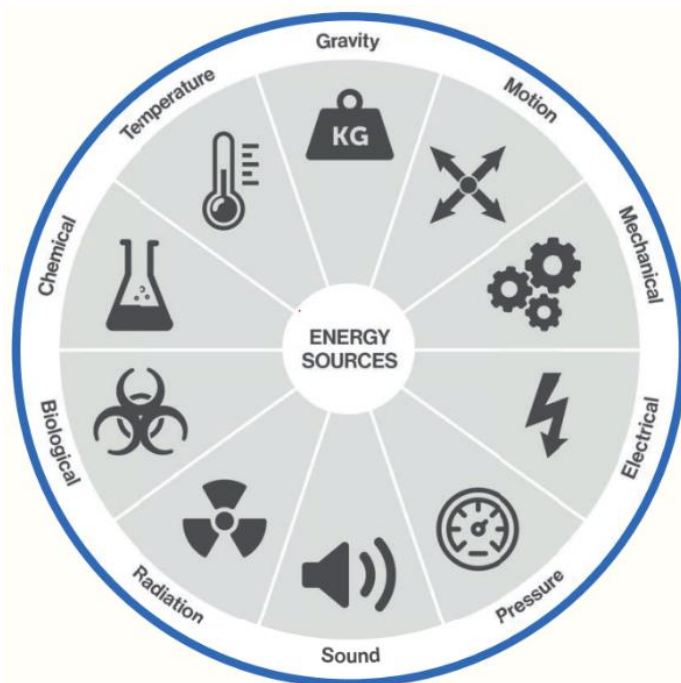
Considering that:

- 1 In pre-job safety briefings, **workers identify only about 45% of the hazards** that they actually face during the work period.
- 2 Hazard recognition blind spots are consistent and predictable, regardless of trade, experience, or education.
- 3 **Hazards that are easily identified** (e.g. gravity and motion) **are recognized instinctually** and require comparatively low cognitive effort.
- 4 **Hazards that are most often missed** (e.g. mechanical, pressure, and chemical) are processed in the cerebrum and **require relatively high cognitive effort**.
- 5 Field experiments showed that **using the energy wheel improves hazard recognition by approximately 30%**.
- 6 The energy wheel is effective because it provides a simple set of reminders to search for hazards that are commonly overlooked.

The energy wheel is a very simple but effective tool for helping to augment the human brain. By providing reminders of energy sources that are commonly overlooked like mechanical, pressure, radiation, and chemical, the energy wheel helps crew members to think more broadly about the hazards in their work environment.

Energy	Definition	Examples
<b>Gravity</b>	Force caused by the attraction of mass to the earth.	Uneven work surface, work at height, unsure materials, overhead support structures
<b>Motion</b>	Change in the physical position or location of objects or substances.	Traffic, mobil equipment, projectiles, dust particles
<b>Mechanical</b>	Working parts of a machine or assembly, including rotation, vibration, tension, or compression	Auger, cable, chain fall, angle grinder, gears, pullies
<b>Electrical</b>	Presence of electrical charge or current	Wires, power lines, power tools, extension cords, transformer, relay
<b>Sound</b>	Audible vibration caused by the contact of two or more objects	Heavy machinery, pile driving, power tools, nail gun
<b>Pressure</b>	Liquid or gas compressed or under vacuum	Pneumatic tire, piping system, tank, hydraulic lines
<b>Temperature</b>	Intensity of heat in an object or substance	Friction, engines, sudden pressure change, steam
<b>Chemical</b>	Toxic objects or substances that pose health risks	Solvents, engine exhaust, silica, wood dust, liquid concrete
<b>Radiation</b>	Objects or substances that emit electromagnetic waves or subatomic particles	Welding, sun exposure, x-ray testing, radioactive waste
<b>Biological</b>	Living organisms or viruses	Bees, snakes, alligators, bears, restrooms

**Table 1: Definition and example of the 10 hazardous energy sources in the wheel.**



## RECEPTION BY THE PROJECT

WHICH ACTIONS IDENTIFIED TO BE IMPLEMENTED IN THE PROJECT:

Project Manager:

Signature:

HSE Project Manager:

Signature: