Hazards exist on all job sites and in every workplace, and these hazards are often result in injuries, illnesses, and incidents/accidents. One common cause of these workplace injuries, illnesses, and incidents is the failure to identify or recognize hazards that are present, or that could have been anticipated. An important and vital component of any effective safety and health program is being proactive and providing a continuous process to identify and address these hazards.

Hazard Identification

Hazard identification is an important and vital part of any injury and illness prevention program within the workplace. If hazards aren't identified, then they can't be prevented, mitigated, or controlled properly. To identify and address hazards, employers and workers can use the following methods/processes:

- Job Safety Analysis (JSA) - A process for evaluating a job (from start to finish) and considers the steps required to do the job, the hazard(s) involved with each step, and the safety measures for avoiding the hazard(s). This process can be conducted on all jobs, tasks, and work processes.

- Job Hazard Analysis (JHA) - A process for evaluating a job, similar to a JSA, but adds an additional "risk assessment" component to the process by including an evaluation of risk for each step and determining the "likelihood" and "severity" or potential consequences of the hazards. This process is used to address human factors, procedural errors, "man-machine interface" issues, and hazards with more complex processes.

- Hazard and Operability Study (HAZOP) - A detailed process, developed primarily for application to chemical process systems. A method of investigating each element of a system for all of the ways in which important parameters can deviate from the intended design conditions to create hazards and operability problems.

Risk Assessment

Once a hazard has been identified, the "likelihood" and "severity" or potential consequences of the hazard will need to be assessed before determining how best to minimize the risk. The accessor will need to utilize the following process to properly access the risk of the hazards:

- 1 - Evaluate each hazard by considering the "likelihood" that an event or exposure will occur, the "severity" of potential consequences or events, and the number of workers who might be exposed.

- 2 - Prioritize the hazards based their overall risk so that those presenting a greater risk are addressed more urgently than those presenting a lower risk. Note, all hazards will need to be addressed.

- 3 - Use interim control measures to protect workers until more permanent solutions can be implemented.

Control Measures

Risk can be reduced by controlling or eliminating the hazard or by reducing the workers' exposure to the hazards. A risk assessment helps workers understand the hazards fully so they can develop or provide safe and effective controls. A useful Effectiveness Hierarchy of Control Measures is as follows:

- Elimination (most effective) - Physically remove the hazard. Eliminate or control all hazards (hazards that cause death or physical harm) immediately.

- Substitution - Replace the hazard. Substitute to less hazardous material or reduce energy (e.g., lower speed, force, amperage, pressure, temperature, and noise).

- Engineering Controls - Isolate people from the hazard. Develop controls to prevent exposure to the hazard (e.g., machine guards, ventilation systems, etc.).

- Administrative Controls and Procedures - Change the way people work. Utilize trainings, other employees and shifts, machinery and equipment, and aids to change how the job or task is performed.

- PPE (least effective) - Protect the employee with Personal Protective Equipment (PPE). Utilize PPE to create a barrier between the employee and the hazard.