

Make Your Accident Investigation Count

Hazards are ever-present in the steel plant environment, and a heightened awareness and emphasis on safety is a necessary priority for our industry. This monthly column, coordinated by members of the AIST Safety & Health Technology Committee, focuses on procedures and practices to promote a safe working environment for everyone.

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Comments are welcome. If you have questions about this topic or other safety issues, please contact safetyfirst@aist.org. Please include your full name, company name, mailing address and email in all correspondence.

Most individuals who have the responsibility of conducting an initial accident investigation for an employer want to do a good job. They are typically guided by a form that requires the gathering of specific information such as the date and time of the injury, location of the incident, type of injury, description of incident/sequence of events, witness list/statements, and a diagram of the scene.

The accident investigation process is used to identify the cause(s) of an accident and determine the proper corrective actions. Virtually all accidents are caused by a combination of unsafe acts (about 90%) and/or unsafe conditions (about 10%). Keep in mind that the main reason an accident investigation is conducted in the workplace is to help prevent a reoccurrence, and given that most accidents involve unsafe acts, the need to determine the root cause is critical.

For an accident investigation to be successful, it will require the collection of pertinent facts about the accident to determine surface and root causes. Surface causes are the hazardous conditions and unsafe employee/management behaviors that produced or contributed to the accident. Root causes are system weaknesses that produced the surface causes for the accident.

Documents that may help determine facts about the accident include standard operating procedures, job hazard analysis, material safety data sheets, training records, safety/health programs, inspection and

maintenance records, and operator/manufacturer manuals.

Determining the surface cause is usually not too difficult, but many investigations stop there. An example would be an employee injuring his/her hand after losing balance and falling into an unguarded belt and pulley assembly. The surface cause is the unguarded piece of equipment. If the corrective action statement simply focuses on the reinstallation of the guard lying on the floor, how much confidence exists that this will never happen again?

In order to make the most of the time and effort put into an accident investigation process, the root cause must be identified. Root causes typically focus on program design weaknesses and performance weaknesses. Program design weaknesses include a failure to effectively develop safety policies, programs, plans, processes, procedures and practices. Performance weaknesses are a general failure to effectively carry out safety policies, programs, plans, processes, procedures and practices. Shortcomings in either area can result in common or repeated hazardous conditions and unsafe/inappropriate performance.

Once the surface and root cause(s) of an accident have been determined, it is time to move to corrective action. Actions should focus on two main areas: engineering and management controls.

Engineering controls may involve equipment redesign, replacement or substitution. In

addition, several questions should be asked: Are less harmful materials available for use? Is there a design flaw in the work flow or process that must be addressed? Are current preventive maintenance measures adequate?

Management controls typically include improvements to policies, programs, plans, processes, and/or procedures in one or more of the following management system elements: management commitment, accountability, employee involvement, hazard identification/control, education/training and system evaluation.

Why do accident investigations fail to eliminate similar accidents? Because they address only the correction of surface causes and ignore or fail to determine the true root cause. Conducting a thorough accident investigation includes analyzing the accident to determine influencing factors that include surface causes and root causes, and using this information to prevent similar accidents.

The following quote was taken from the U.S. Occupational Safety and Health Administration website's Safety & Health Topic on accident investigation: "Thousands of accidents occur throughout the United States every day. The failure of people, equipment,

supplies or surroundings to behave or react as expected causes most of them. Accident investigations determine how and why these failures occur. By using the information gained through an investigation, a similar, or perhaps more disastrous accident may be prevented. It is important to conduct accident investigations with prevention in mind."

Make accident investigations count. Don't look at them as a one more thing that must be done. Rather, embrace the process of determining the true cause and realize the satisfaction of being part of the process of preventing injury to a fellow employee. ♦

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