

INCIDENT INVESTIGATION CHART

AT RISK BEHAVIORS AND SITUATIONS (Immediate and Basic Causes)

Substandard Action and Behaviors

- ★ Failure to wear PPE
- ★ Failure to secure
- ★ Failure to warn
- ★ Horseplay
- ★ Improper loading
- ★ Improper manual handling
- ★ Improper placement/positioning
- ★ Making safety device inoperable
- ★ Operating equipment inappropriately
- ★ Operating without authority
- ★ Servicing equipment improperly
- ★ Under the influence of a substance
- ★ Using defective equipment
- ★ Using equipment improperly
- ★ Not following procedure/policy or work permit
- ★ Not using the most appropriate tool or equipment to perform the task
- ★ Working excessive hours
- ★ Working at excessive speed/haste
- ★ Attempting to operate tools or equipment beyond their physical capability
- ★ Attempting to operate tools or equipment beyond their skill or knowledge level
- ★ Operating under physical and/or mental distress
- ★ Failed to recognize hazards associated with the task/project

Substandard Conditions

- ★ Inappropriate tool or equipment guarding
- ★ Inappropriate tool or equipment for the task/project being undertaken
- ★ Inappropriate PPE
- ★ Equipment failure
- ★ Inappropriate warning systems
- ★ Fire/Explosion hazard
- ★ Congestion/Restricted work area
- ★ Performing task/project with inappropriate or insufficient tools or equipment
- ★ Inappropriate work method for the task/project being undertaken

System / Root Causes

- ★ Shortcutting standard procedures is positively reinforced or tolerated
- ★ Inadequate tools or equipment
 - » Substandard purchasing criteria or process
 - » Substandard asset management/movement/control
- ★ Doing the job according to procedures or acceptable practices takes more time and/or requires more effort
- ★ In the past, did not follow procedures or acceptable practices and no loss occurred
- ★ Lack of skill or knowledge
 - » Substandard management training
 - » Substandard skills and knowledge based training
 - » Substandard recruitment and induction process
- ★ Lack of, or inadequate, operational procedures or work standards
 - » Substandard emergency procedures and training
 - » Substandard hazard identification and management/control process
- ★ Inadequate communication of expectations regarding procedures or work standards
 - » Substandard communication process
 - » Substandard HSEQT program administration
 - » Substandard investigation and/or follow-up of previous occurrences

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System / Root Causes (continued)

- ★ **Inadequate or inappropriate task/project planning**
 - » Substandard maintenance performance and/or scheduling
 - » Inadequate tools and equipment
 - » Inappropriate manning levels
 - » Inappropriate or insufficient PPE
 - » Substandard recruitment and induction process
 - » Substandard task/project scoping or contract review

ROOT CAUSE DEFINITIONS

Lack of Skill or Knowledge

The employee or contractor does not have the necessary understanding or proficiency to perform the task as required

In the past, did not follow procedures or acceptable practices and no loss occurred

The employee thinks it really isn't important if the task is done precisely as required. This perception is statistically reinforced when procedures are not followed and there is no consequence. The perception is also reinforced when team leaders do not make compliance with standards important.

Doing the job according to procedures or acceptable practices takes more time and/or requires more effort

The employee does not perform the task as required because it takes longer and/or requires more work, despite knowing how the task should be completed. The employee knowingly deviates from standard procedures or acceptable practices, he/she has been trained properly, knows how to do it but consciously takes a calculated risk.

Short cutting standard procedures is positively reinforced or tolerated

The employee thinks the team leaders would appreciate getting a task done faster or more productively or is actually told to take a short cut in the best interest of throughput or downtime.

Lack of or inadequate operational procedures or work standards

The person does not complete the task properly because there is no work standard or procedure established consistently across the company that outlines specifically how the task is to be completed.

Inadequate communication of expectations regarding procedures or work standards

Although a standard has been developed, the employee does not complete the task properly because he/she is unaware of the standardized procedure.

Inadequate tools or equipment

The employee does not complete the task correctly because the proper equipment or tools are not available; the equipment is not maintained in a safe, operable condition; or the equipment is inadequately designed to complete the required task.