



## Health & Safety

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# Shop Safety: Understanding Operational Risks

Most shop managers and personnel are familiar with the traditional benchmark performance statistics, such as OSHA's Recordable Case Incident Rate, Lost Workday Case Incident Rate, or the general "number of days since last accident" postings. These are useful measures for after-the-fact occurrences—they are not direct indicators of actual operational

risks. Everyone's objectives are to reduce accident and injury rates, but often individuals develop a myopic focus on numbers, rather than reasons. Performance numbers will always be important; however, in order to truly understand risks associated with the processes, one must look at what leads up to those actual statistics.

### Record, Review & Respond

One of the most useful tools available is to record, review and respond to "near-miss" occurrences. All of us have experienced a near-miss situation in the shop, such as almost slipping on a spill, getting a jolt from a piece of electrical equipment, or banging your head on a protruding part on a shelf. How many times, however, have you stopped to find out why it happened or what could be done to prevent such a situation in the future? A near miss is symptomatic of a condition in the shop that is out of control.

OSHA requires the recording of accidents/illnesses that are work related and meet the criteria for reporting. This would be like counting the number of horses that were in the barn after the door was left open and they escaped. It does little to allow the operation to understand why this occurred. Measurement, investigation, and correction of near misses will often give a better understanding of what is out of control before it becomes an OSHA statistic.

Line operators, supervisors, foremen and managers should be trained to look for things that can cause accidents as a routine part of their everyday duties. As items are found, the investigating person should:

1. Record and review with operators to determine why the condition(s) might exist.
2. Discuss what the risk potential of the condition(s) could be.
3. Develop plans to prevent a repeat of the occurrence(s) with operators.
4. Implement follow-up inspections.

As an example, let's take a case where an operator almost fell when he/she slipped on a wet spot on the shop floor. Usually, the general response is to put a little absorbent down and go on about the regular work day. Seldom is time spent to determine what caused the spill/leak in the first place. Many times, a leaking pump or hose connection may be the cause, and to correct this, some maintenance would be required. Another cause may be that a drip pan overflowed because no one was designated to check this condition and empty it before it overflowed. Or, the condition may have occurred because someone spilled a liquid of some sort when adding/draining chemical from the line.

The point is, when an abnormal condition is noted, it should be immediately addressed. If immediate action is not feasible, then some sort of warning should be provided and follow-up inspections performed as soon as possible.

The most difficult part of implementing this kind of tracking/response program is getting management and employees to recognize the importance and significance of near-miss situations. Unfortunately, what is a near miss for one person may be viewed as a normal condition by another. The important point is that

both employees and management need to review and understand what is acceptable procedure and operational status, and how to respond in a proactive manner to any deviation from those norms.

#### Establish Process Procedures

The best way to approach this is to have written procedures—prepared jointly by management and employees—covering all significant shop operations. These procedures should address not only process steps, but should also include information on raw materials and equipment used.

For each process procedure, a review of potential hazards associated with that operation should be listed, and a brief checklist prepared for operators to use as a reference to ensure that the most common safety hazards are not present. Each process hazard review should be documented and discussed with employees upon assignment to the job initially, and periodically while on the job. All shops in the U.S. are required by OSHA regulations to provide their employees information on the health hazards associated with the chemicals they use. This is usually accomplished in HAZCOM training sessions provided by management. However, one area seldom covered in these sessions is a discussion of the process equipment and related support equipment.

#### Support Equipment Safety

Employees should be given information on such things as:

- Why exhaust/ventilation is provided and how the contaminated air is kept out of the operator's breathing zone,
- Why it is important not to block the lip vents or hoods,
- Why duct boards/mats are provided,
- Why freeboard space is provided in tanks,
- Why electrical equipment is grounded,
- Why electrical cords/wires should not be laying on wet surfaces,
- What a "squealing" fan belt noise means, etc.

Most of these items are basic to experienced employees and therefore not often questioned. To new employees, however, this type of information can be vital for their safety. I'm sure

most of you can add many more safety tidbits to your own list.

#### Good Housekeeping

One of the most significant contributors to both OSHA recordable incidents and near miss scenarios is poor housekeeping. I strongly recommend the development of a zero tolerance for sloppy housekeeping. Three things are necessary to achieve this:

1. A place for everything and everything in its place.
2. Employee awareness of safety risks that can be associated with poor housekeeping habits.
3. Vigorous management enforcement of housekeeping practices.

By now you are probably wondering why this article has digressed from its "near-miss" focus in the last few paragraphs? The reason is simple: In order to make employees aware of near-miss scenarios, it is crucial that they have an understanding of what normal operating conditions are for their processes. New employees generally do not have this knowledge, and it is seldom covered in training programs. In my experience, I consider the following examples of near-miss incidents that would be recorded as such and corrected:

1. Frayed wires and/or corroded electrical plugs
2. Leaking/dripping pumps and filters

3. Blocked exits or major electrical service panels
4. Broken, split duct boards or torn mats
5. Parts/tools or other debris on the floor
6. Spilled or leaking chemicals (including water)
7. Improperly grounded electrical equipment
8. Improperly labeled containers
9. Emergency equipment not where it is supposed to be or not in serviceable condition
10. Assignment of operators to a process line without appropriate HAZCOM training beforehand
11. Any situation where poor housekeeping is evident and/or where management has failed to enforce rules, etc.

The list of possibilities is endless. One important aspect of this approach is that all near-miss conditions encountered should be listed, and subsequent corrective action taken should be recorded. This record is extremely useful in presenting to employees the reasons for near-miss tracking using real on-the-job incidents. This record is also required to develop trends in safety performance, to identify areas of safety risk, and to provide focus for management corrective action. P&SF