The Blue Bolt

WINTEK **Engineering Ltd.**
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The intention of these articles is to inspire thought, not provide a solution. All safety design should be conducted by a professional engineer.

How to Choose Your Safety Engineer!

The Problem

It's bad enough that you have been thrust into the unknowns of the safety world. Now you have to find someone you can trust to get you through it. It's never easy, but here are some things to look for:

The Solution

a) You can start with the yellow pages or the Internet. Generally anyone seriously in the business can be located here.
b) Call your local electrical distributor or safety sales rep; they probably have a few names of people they trust.
c) If you have a contact from another local company call them to find out whom they use. The MOL may be willing to give you some names.
d) If you have time, interview two or three prospective engineers.
e) Find out their audit philosophy. You want someone who will diligently audit the machine and identify all the risks. If they only spend 15 minutes at the machine, they are not doing the job. You also want someone who is willing to take the time to understand your machine operation and provide solutions that will minimize the impact to machine operation but still meet all the safety requirements
f) Ask for a sample of a report they have done for a similar piece of equipment. If you can read it and understand it you are on the right track. If it is ½" thick and impossible to discern what you need to do, run for the hills.
g) Ask for references. A good engineer will gladly provide these for you. Finding out the positives and negatives from someone who has gone through this is invaluable in making a selection.
h) Price is not necessarily a good indicator of quality. You want to pay fair prices to get quality work. Be warned that making your decision on price alone will surely cost you money in the long run.

Choosing the right engineer that will do a quality job for a fair price will give you the long-term support you will need when the MOL visits.

Choosing the lowest priced engineer or the one willing to compromise quality will accomplish nothing. In the final analysis, you are the one responsible and by going this route you are not doing your due diligence.

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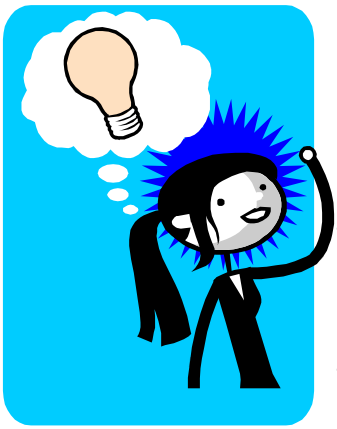
A Few Bright Lights



The Problem Due to the evolving machine safety standards, the addition of safety circuits to machines is becoming more common every day.

However, sometimes these necessary additions can cause production delays because they are difficult to troubleshoot. Many times the newly added safety circuits are blamed for the machine going down or failing to cycle. Inevitably, the plant electrician is called over only to find it is an interlock out of position or an E-Stop not reset. Many times the machine fault has nothing to do with the safety circuit.

What can you do to avoid this?
Installing safety circuit status lights go a long way to reducing the troubleshooting time and the machine can be re-started much more quickly. A red pilot light indicating that the door interlock is open or an E-stop depressed will allow the operator to quickly reset the machine. Green pilot lights showing that the safety circuits are okay allow the electrician or operator to concentrate on a process problem rather than wasting time blaming the safety circuit.

PHSR Website

Many of you may not know, but in addition to our general website, www.wintek-eng.com , WINTEK Engineering also hosts a website dedicated to pre-start health and safety reviews. This website has recently had a face lift and is worth checking out. It highlights the questions we are frequently asked by many of our clients who are interested in the process and details of a PHSR.

The website also includes links to many of the standards used when performing pre-start health and safety reviews. If you are interested in Wintek's PHSR philosophy or just want to satisfy your curiosity please check us out at www.phsr.com.

Saving You Money

How to Avoid MOL Disaster

As you may be aware, the Ministry of Labor is stepping up their activity in the area. They are targeting the small to medium sized businesses that have poor lost time injury and claims histories. A visit by the MOL can be quite disruptive to your production plans and your expense budgets if you don't have a solid action plan in place.

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WINTEK Announcement

WINTEK would like to take this opportunity to officially welcome the newest member to our safety team. Jim Fallowfield is a Professional Engineer who recently joined WINTEK as our demand in the safety industry has been on a steady rise.

Jim is an experienced engineer in the field of machine design and safety circuitry. He is no stranger to the PHSR process and requirements for machinery safety. Jim is looking forward to meeting and working with all of our customers and clients.

(Saving you money - continued from page 2…)

One of the most disruptive orders you can get is a 54 (1) (k). This requires you to engage an engineer to review a machine and verify that it is “not likely to injure a worker”. If you are not prepared, this can be an expensive experience. Worse still is the 54 (1) (l). Not only does it encompass the requirements of the 54 1 k, it also shuts down your machine immediately and keeps it down until you meet all safety requirements and get the machine signed off by a professional engineer. You really do want to avoid these situations.

What can you do?

a) Engage an engineer immediately.
b) Perform a general audit of equipment in your facility and identify high-risk machines.
c) Perform detailed audits on the high risk machines and identify non compliances with the respective safety codes
d) Establish an action plan to correct the non-compliances.
e) Go after the low risk machines after the high risk ones are in full compliance.
f) Document everything.
g) Don’t stop even if you have to slow down.

When done in a planned and controlled manner over time, bringing your equipment into compliance can be done with a minimal impact to production numbers and budgets. It is far more costly to deal with non compliance issues under a 54 (1) (k) and more so under a 54 (1) (l) than working at your own pace under the guidance of an engineer who will support you throughout the process.

The above will save you money. IT’S YOUR CALL

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ASK THE EXPERTS

Understanding System Grounding

What is the Purpose of Grounding Your System?

System grounding has many purposes. It allows for the control of voltage to earth, or ground, within predictable limits. It provides for a flow of current that will allow detection of an unwanted connection between system conductors and ground which will allow for the operation of automatic protective devices such as fuses or breakers. System grounding limits the voltage stress on the insulation of conductors. The control of voltage also allows reduction of shock hazard to personnel. Most grounding techniques employ some method of grounding the system neutral at one or more points. This can be accomplished by solid grounding or impedance grounding.

Advantages between Grounded and Non-Grounded Systems

The first main advantage attributed to non-grounded systems is that ground faults will cause little effect on the system so that it may operate with a ground fault present improving continuity. The second is that no expenditures are required for grounding equipment or grounded system conductors.

Several advantages are attributed to grounded systems, including greater safety, freedom from excessive system overvoltages that can occur on ungrounded systems during arcing, resonant or near-resonant ground faults, and easier detection and location of ground faults when they do occur.
There are three essential requirements for safe press hydraulic circuitry.

Types of Grounding Systems

- ***Solidly Grounded Systems*** *- A solidly grounded system is a system in which at least on conductor or point (usually the middle wire or neutral point of transformer or generator windings) is intentionally connected directly through an adequate ground connection in which no impedance has been intentionally inserted.*
- ***High Resistance Grounded Systems*** *- A high resistance grounded system is a grounded system with a purposely inserted resistance that limits ground-fault current such that the current can flow for an extended period without exacerbating damage. High resistance grounded systems are designed to meet the criterion to limit the transient overvoltages due to arcing ground faults.*
- ***Low Resistance Grounded Systems*** *- This is a resistance grounded system in which the purposely inserted resistance has lower ohmic value than would meet the high resistance grounding criteria. The resistance is selected to provide the desired relaying current.*

A properly designed grounded system can mean the difference between equipment damage and safety to personnel. If you are having grounding issues, a qualified professional engineer can help identify and remedy the situation before it escalates to a level where the safety of your personnel and equipment is jeopardized.

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