

AUTOMATED MACHINERY DATA BACKUPS



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Computer controlled machines have become an essential part of the efficient functioning of modern truss plants. Have you thought about the consequences if suddenly the hard drive on your computerised radial arm saw failed, or the electrical cabinet on your multi-head jack jig caught fire?

How long would it take you to be up and running again? More to the point, how much production would you lose and what would be the cost to your business? If the data backup system at your truss plant is adequate then the answer should be 'very little'.

All truss plants need a data security system to protect information that is vital to their business. Every truss plant's risk management strategy should address the issue of protecting machine controller data. GN Guidelines 28 & 63 identify some of the common causes of lost data and the steps that can be taken to protect against them.

These apply as much to a machine controller computer as to an office PC. There are several factors that make data security on automated machines different to office PCs. One of these is the variation in types of machine controller. Broadly speaking there are three basic categories of machine

controller that may contain information for backup:

1. PC based operator interfaces and controllers.

These are similar to desktop PCs, having a hard drive for data storage, a LAN connection to the office, and perhaps a floppy drive or CD-ROM drive.

PCs in machinery with inadequate dust or vibration protection are susceptible to premature component failure. Although industrial grade PC's are available for the harsh machine environment, these are often the exception rather than the norm in truss plant machinery.

Furthermore, the operator interface often runs in the familiar Windows environment, making it all too tempting for an operator to apply the screen saver, change some colors, add some important computer games, and perhaps accidentally delete a few critical files.

On the up side, precious programs and data files can often be easily backed up in the same way as an office PC.

2. Programmable Logic Controllers (PLCs).

PLCs are one of the most common machine controllers. They are robust, flexible, reliable, and purpose built for machine control. The PLC program is written with the manufacturer's software, downloaded to the PLC through a communications cable, and uploaded in the same way.

The program is usually stored in a memory that requires battery backup and I suspect that one of the chief causes of lost programs is flat batteries, although occasionally the program or data is corrupted and must be reloaded.

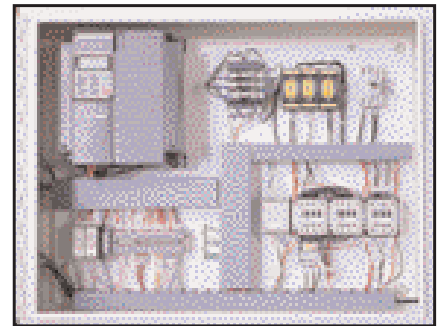
3. Dedicated devices with embedded controllers.

Variable Frequency Drives (VFDs) used to control the speed of drive motors for Portal and Gantry Press frames are one example. These contain a small, dedicated electronic controller that holds a number of parameters that govern the behaviour of the drive eg. acceleration and deceleration times, overload settings, etc.

These are usually entered through

buttons on the drive with the aid of small digital display. The variables are stored on a chip that does not require a battery to retain memory, however if the VFD gets a power spike or the controller fails this data can be lost.

Note that there are an increasing number of dedicated devices, such as programmable relays, that have program data downloaded from a PC via a communications cable. In this case the data can only be backed-up if you have the associated software and cable.



To complicate matters it is not uncommon to find all three of these controller types on one machine. Also, your normal IT support professional may not own, or be familiar with, the software and hardware required to secure the data.

It can be prohibitively expensive to keep such software in-house, resulting in the need to rely on attendance of the OEM or a third party in the event of data loss.

Weigh up carefully the potential for lost business versus the cost of the software and a little training to use it.

Once you know what data you need to back up for your truss plant machinery, apply the checklist in GN Guideline No.63 and see how you score. If you get a 'thumbs down', don't delay your action.

Backing up machine controller data is as simple as ABC -

Ask your IT professional or machinery supplier about what data to back up if you aren't sure.

Backup regularly so that the restored data is relevant when required, and

Consider the implications of not having followed A & B if an incident were to occur!