



Every two months, SGS Baseefa Technical Manager Ron Sinclair MBE gives his perspective on the latest developments in the world of standards.

The problems of postponement

I am writing this just as I should have been getting ready for a two-day (online) meeting of the European Ex Notified Bodies Group (ExNBG). However, with only a week to go, the meeting was postponed. The main reason given, was the unavailability of the European Commission representative. As the European Commission holds the purse strings for the meeting, I suppose they can have the final say on dates.

But there are a number of items on the draft agenda that don't need the attendance of the Commission and, as it is an online meeting, there are no travel costs. In my mind, it would have been worthwhile to hold a shorter meeting, to get some urgent agenda items out of the way, rather than go for a three-month postponement of the whole meeting. After all, about 100 people had already rearranged other commitments to be available on those days, and I had anticipated being able to review the outcome of the meetings in this article.

Two years ago, I postponed total renewal of my garden fence. Four 2 metre posts were renewed and three were considered good enough for the cost of renewal to be postponed. At the end of January, during storms Malik and Corrie, despite being in part of the UK that was only marginally affected, the three older posts gave way, and most of the fence was blown down. Postponement had been a bad idea.

How often do we put off spending money on maintenance, only to have greater disruption and cost in the end? Domestically, it is not often a big deal, but lack of maintenance on a car could be catastrophic; and not servicing a gas boiler could lead to death from carbon monoxide poisoning.

Industrially, particularly in hazardous areas, the potential for harm is far greater. So, postponement of routine inspection and maintenance can lead to greater catastrophe. The larger companies, and multi-nationals, generally follow fairly strict regimes, but even they sometimes fall down, and we can read about some of the results each month in the Hazardex news.

Most people are familiar with the Swiss Cheese model; the idea that all the holes in the slices have to align before something gets through and a catastrophic event occurs. I suggest that every postponement of inspection and maintenance can be likened to an increase in size of the holes in the individual slices of cheese. If the holes are small, the chances of an alignment are small, but the larger they get, the greater the chance that the holes will, at least partially, overlap, allowing a disaster to occur.

In the very simplest model, the three sides of the explosion triangle (fuel, source of oxygen, source of ignition) can be the holes in three slices of cheese. Usually, we cannot do anything about the source of oxygen, unless we introduce an inert atmosphere, so that hole is always pretty big. We need to concentrate on making the other two holes as small as possible, to reduce the possibility of an overlap. And this aligns with the introductory clauses to the Essential Health and Safety Requirements in the ATEX Directive and the related UK legislation.

First, you keep the explosive atmosphere under control by minimising the chances of occurrence. This implies preventative maintenance of the process: the avoidance of leaks. We quantify this qualitatively as area classification; the zoning process.

Second, we reduce the chance of an ignition source being present, usually by choosing Ex equipment that meets the technical requirements of the relevant standards, normally in the IEC 60079 series or ISO 80079 series. The concept standard and the associated Equipment Protection Level (EPL) may effectively describe the size of the initial hole in the cheese slice, but it is the inspection, maintenance and repair standards that control how it grows.

In some situations, we can invoke the third option in the ATEX directive, and add an extra cheese slice, by using a "Protective System", that acts, once an explosion has started to occur, by snuffing it out (inerting or rapid acting barriers), or by venting it in a safe direction. But having to introduce a protective system adds yet further complication of inspection and maintenance.

Postponement is always the dangerous option. ■

About the author

SGS Baseefa's Technical Manager Ron Sinclair MBE will continue to attend the European Notified Bodies Group for ATEX (ExNBG), although representing SGS Firmko, their partner EU Notified Body, now that the UK bodies are excluded. He is Chair of the IECEx Service Facility Certification Committee and a member of the IECEx Executive. He is chair of the UK Standards Committee operating in this area for electrical equipment, and recently retired as chair of the European committee.