CYBER SAFEPS EXPERT Q&A

Industrial control systems (ICS) are vulnerable to cyberattack; a technology malfunction can lead to asset damage, environmental consequences, financial losses, and even injury or loss of life.

We pose some questions to our expert to learn more about the risks to process plants from cyberattacks; why cyber security is an essential part of the plant risk assessment process; who our expert is and what his credentials in this area are.

Summary of your role at DEKRA Organisational & Process Safety

I am a Process Safety Specialist with DEKRA. I do a lot of work studying the more complex data on process plants and explaining to clients what it means for them. It is the same skill I learned for doing my Expert Witness work in UK Courts on process engineering cases and for writing the export reports – you have a skill in explaining the complex.

What does safety mean to you?

Well it means as close to zero injuries (and fatalities of course) as you can possibly achieve on a consistent basis. It is the constant need for this that many companies struggle because it is too easy to let your guard down even for just a brief moment. Some of the best safety engineers are good process engineers first before they specialise in Process Safety, because they will seek out and understand the practical, easy and sensible solutions and avoid unnecessary complexity and cost.

What is the most satisfying part of your job and which of your projects are you most proud of?

At a client's refinery, we had arrived at the point of virtually no accidents and I was successfully getting rid of unnecessary high integrity SIL (Safety Integrity Level) rated systems. It had been all too easy for someone to "lick their finger" and say to themselves "That sounds dangerous" without any evidence and put in a SIL rated context when it was the wrong answer. In practice taking something out requires a lot more proof to others than how easy it was for someone to have put in the wrong and complicated solution. I also changed a lot of the proof testing arrangements to make use of start-up and shutdown to do a proof test and thereby made it easier for everyone.

Why is Cyber Security an important part of plant process safety?

It is essential to go through any process plant and ask what happens if part of the process control system fails. If you have successfully integrated in depth defence measures and diversity amongst the barriers that keep you safe, then you almost always find you have enough safeguards. This naturally leads into Cyber and so the work I have done in IEC62443 group of standards about Cyber security constantly covers the safety aspects as well.

Do you need to be an IT whizz kid to consider Cyber Security in a plant PS context?

No, certainly not, but it is an ongoing problem that people

wrongly assume otherwise. At its heart a cyber-attack is what causes the process control failure, so if you get the "defence in depth" and "diversity" then you find a lot less cases where cyber-attack can compromise safety.

Do we have to do this by law?

I am not a lawyer, so I am the wrong person to answer this question, but the Health & Safety at work act requires that you do "suitable and sufficient assessment of the risks". You can't really make any realistic cases that process control failure or cyber-attack is not one of today's risks that you and your employer should have assessed.

What would you say the future looks like for Cyber Security, is it going to get more complex?

In these early days we have mainstream media misleading people because it finds that most businesses want to keep very quiet about cyber-attacks that caused people injuries or even killed people – but they can get information on cyber-attacks that stole information or locked files and held them to ransom. Both are of course true, but the publicity is wrongly skewed and we have to go through a phase when businesses learn the hard way what the real risks are.

Meet Our Expert

DEKRA Principal Process Safety Engineer, **Clive de Salis,** is an expert in process design safety and critical instrumentation; hazard and risk assessment; P&ID development and loop schematics.

Clive has 40 years' experience, from gaining a B.Sc. Chemical Engineering with Honours from the University of Exeter in 1980 and an M.A. (ATS) from the University of Birmingham in 2001. He was the Inst.M.C London branch engineer of the year for 2013, he was the 1st Chair of the 61508 Association and is now the Vice- chair of the I.Chem.E Safety & Loss Prevention SIG. Finally, he is not only a Professional Process Safety Engineer himself but an International Assessor for the I.Chem.E.

The author of many publications and papers, Clive has extensive experience covering process hazard analysis with well-known tools such as HAZOP and HAZID and has successfully completed many COMAH reports, OBRA analyses (Occupied Buildings Risk Assessment) and Basis of Safety documents covering ATEX and COSHH. A member of the IEC committee that writes the IEC61508 group of standards that includes the cyberattack standards and the IEC62443 set of standards covering process plant security and safety, Clive is often called upon as an expert witness in the UK court system. We put some questions to Clive, to help you understand his expertise and his take on why cyber security in a process safety context is an essential part of plant safety.

DEKRA Organisational & Process Safety

DEKRA Organisational and Process Safety are a behavioural change and process safety consultancy company. Working in collaboration with our clients, our approach is to assess the process safety and influence the safety culture with the aim of 'making a difference´.

In terms of behavioural change, we deliver the skills, methods, and motivation to change leadership attitudes, behaviours and decision-making among employees; supporting our clients in creating a culture of care and measurable sustainable improvement of safety outcomes is our goal.

The breadth and depth of expertise in process safety makes us globally recognised specialists and trusted advisors. We help our clients to understand and evaluate their risks, and work together to develop pragmatic solutions. Our value-adding and practical approach integrates specialist process safety management, engineering and testing. We seek to educate and grow client competence to vide sustainable performance improvement; partnering with our clients we combine technical expertise with a passion for life preservation, harm reduction and asset protection.

We are a service unit of DEKRA SE, a global leader in safety since 1925 with over 45,000 employees in 60 countries and 5 continent. As a part of the world's leading expert organisation DEKRA, we are the global partner for a safe world.

We have offices throughout North America, Europe, and Asia.
For more information, visit **www.dekra-uk.co.uk/en/dekra-organisational-and-process-safety/**
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Would you like to get more information?

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