

Yorkshire emc & Compliance Club

September, 2004

Doncaster

NEWSLETTER No. 3

CLUB NEWS IN BRIEF

Thank you to everyone who attended our last meeting, which was **emc York 2004**. A summary of the event is included in this edition.



New Regional Technical Sales Manager for York EMC Services Ltd



To fill the gap left by Ed Dawes who retired earlier this year, YES has appointed Tim Hitch as the Sales Manager for England and Wales.

Tim joins YES with a wealth of experience in EMC having worked as an EMC Engineer at BSi, Creda and Dyson. Some of you may have already met Tim at **emc York 2004** which believe it or not, was actually his first day on the job!

Free Guide to Changes in Medical EMC Standard

Club members are invited to register for their **free guide** in preparation for changes to Medical EMC Standard EN60601-1-2:2001 on the 1st November. Simply visit www.yorkemc.co.uk for more details.

Rohde and Schwarz join the Club!

We'd like to take this opportunity to welcome some new club members, Garry Phelan and John Bledbyn of Rohde and Schwarz (Manchester) have joined the **Yorkshire emc and Compliance Club** in June. We hope to see both representatives from R&S at club meetings in the near future.

Fourth Meeting – 28 September 2004

Being the Yorkshire EMC and Compliance Club, EMC is not the only Directive with which we must concern ourselves. This fourth club meeting turns our attention to the WEEE Directive and features two guest presentations on the subject. We welcome Martin Braun of Premier Hazard and James Clark, Green Chemist.

Impact Assessment of WEEE and RoHS Martin Braun – Premier Hazard



special purpose vehicles.

In order to evaluate the impact of recent EU waste regulations, an impact assessment has been made and an action plan agreed which Martin will review for us.

The first step was to examine the scope of the ELVD, RoHS and WEEE Directives. Next, it was endeavoured to achieve an overview of the

Premier Hazard produces electric and electronic equipment for emergency services and other

requirements in the Directives. Finally, specific requirements that may be applicable to Premier Hazard were estimated.

This led to recommendations, which formed the basis of an action plan.

The presentation will assist members of the **Yorkshire emc and Compliance Club** to understand those waste Directives more clearly; and should spark off some discussions, which will assist in clarifying members' needs.

www.premierhazard.co.uk

DATES FOR YOUR DIARY

- 15/16 Sep 2004 – LVD Workshop: Electrical Safety Requirements
- 22/23 Sep 2004 – Interference Hazards and Electrical Safety in the Healthcare Environment
- 29/30 Sep 2004 – EMC Workshop: EMC Design
- 6 Oct 2004 – EMC Workshop: TCF
- 11-15 Oct 2004 – Electronic Design Techniques for EMC
- 25-29 Oct 2004 – Electromagnetic Measurements and Environments
- 8 -12 Nov 2004 – EMC in Railways ALSO Fundamentals of EMC Design and Testing



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Green Chemistry – Professor James Clark Head of the world-leading Clean Technology Centre at the University of York

The manufacture of electrical and electronic equipment is entirely dependent on chemical components but new EU legislation (RoHS and WEEE) will dramatically restrict or influence the chemicals that can be used in new products. Green Chemistry is the design and application of more environmentally benign chemicals and chemical processes. By applying the fundamental concept of "benign by design" it seeks to reduce waste and hazards throughout the lifecycle of a product and hence reduce its overall environmental footprint. We will describe the concept of Green Chemistry from first principles and see how it is beginning to make a difference in chemical manufacturing. We will then look at the chemical related challenges for the EEE industries and consider how Green Chemistry can be used to help influence product design and analysis, and help find substitutes for hazardous components.



£20 million funding for Yorkshire Businesses

Ever wanted to go on a training course but your boss said it was too expensive?

Hundreds of businesses in South Yorkshire are benefiting from a £20 million Government investment fund available for employee training. This of course includes companies with a need for EMC training.

York EMC Services Ltd is pleased to be a registered provider with the scheme and so training courses from one day seminars to a fully fledged Masters in EMC will be subsidised by 40% for bookings before **March 2005!** To qualify for the scheme, companies must pay their business rates to **Rotherham, Doncaster, Sheffield or Barnsley** councils in order to cut costs of training by 40%. More details on www.20m4u.com.



Front Runner at York Racecourse!

The success of the recent **emc York 2004** event, which took place on 1st and 2nd July 2004, is definitely something to write home about. The event overcame all "hurdles on the track" to be the "most successful event since **emc York** began," said Chris Marshman, Conference Director.

The international conference and exhibition has been branded the best of the previous 7 **emc York events** thanks to an enhanced and extended conference programme, an improved venue (York Racecourse), and a greater number of attendees (175 in total).



The highly acclaimed conference programme included all the essential EMC topics in the form of refereed conference sessions from EMC measurements to EMC

in Railways, and attracted both speakers and delegates from no less than nine European countries! 35 speakers in total participated in the conference, which was held in the Racecourse's executive boxes.

The technical exhibition comprising 18 stands favoured well with both exhibitors and delegates alike.



The exhibition was large enough for delegates to talk to a range of EMC companies yet small enough to allow exhibitors the opportunity to reach all

delegates over the two days – providing excellent value for money and at less than half the cost of less established UK EMC events. Qinetiq kindly sponsored the delegate bags, whilst Deltron-Emcon provided inserts.

On behalf of York EMC Services Ltd, thanks to all delegates, exhibitors and speakers for making **emc York 2004** such a success. We look forward to welcoming you to **emc York 2005** at York Racecourse! More details available soon.



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SCOPE FOR THE IMAGINATION (Part 2): FOCUS ON RoHS

By Club Member Martin Braun, Premier Hazard (c)

In our last edition, Martin provided us with a focus on the WEEE Directive. Part 2 of this series now focuses on the impact of the RoHS Directive.

Most EU directives go quite unnoticed by the general public – not so the WEEE Directive and RoHS Directives. The radio news reports about fears that the countryside will be cluttered with discarded electric and electronic appliances. The DTI sent out brochures to companies to raise awareness. Many businesses wonder what they have to do to comply with these Directives.

Before starting to panic about any extra financial and administrative burden it is good sit back and ask: “Do I have to comply with which Directive? What is the scope of the RoHS Directive?”

The Scope of the RoHS Directive

The RoHS Directive applies to EEE supplied for voltages below 1000V ac or 1500V dc and which falls into the categories 1 to 7 and 10, listed in annex 1A of the WEEE Directive. This Directive also applies to electric light bulbs and luminaires in households. It applies to EEE without prejudice to EU legislation on health and safety and other waste management legislation.

There are no exceptions for military equipment or products, which form part of equipment not covered by the WEEE Directive. Does this mean that these types of equipment have to comply with the RoHS Directive? Well, according to part III of the information document the Government proposes “to construe the scope of the RoHS Directive by reference to the WEEE Directive and to apply the exemption provided in Article 2.3 of the WEEE Directive to exclude any electrical and electronic equipment that is intended specifically for military or security purposes from the scope of the RoHS Directive”.

Example: Car radio

It is good to work through an example to see what is what. So let's take a car radio as an example to illustrate the difficulties of deciding whether the WEEE and RoHS Directives apply.



Does the WEEE Directive apply to car radios? According to annex 1A, consumer equipment is within the scope of the WEEE Directive (Category No 4). Annex 1B specifically includes radio sets. However, because the car radio will be fitted to a car it is outside the scope of the WEEE Directive

because the end product (here: the car) is outside the scope of the WEEE Directive.

What about the RoHS Directive? The previous paragraph pointed out that the car radio fits category No 4 of the WEEE Directive. The RoHS Directive includes this category and there is no exclusion specifically mentioned for parts of other types of equipment outside the RoHS Directive. So it may have to comply with the RoHS Directive although it is unlikely to have to comply with the WEEE Directive. This may be also differ from Member State to Member State.

To make matters worse, a car radio may be subject to other EU waste management directives, e.g. the End-of-Life Vehicle Directive (ELVD). It is probably not as bad as it sounds because the banned substances are similar. In this respect the RoHS Directive is probably a bit more stringent than the ELVD.

The scopes of the WEEE and RoHS Directive are by no means as clear as industry would like. The Member States are still trying to understand each other so they can provide guidance to their manufacturers. However, only a court of law can interpret law authoritatively – until then there is a lot of scope for the imagination!

Further Reading

WEEE:

www.dti.gov.uk/sustainability/pdfs/finalweee.pdf

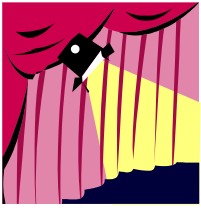
RoHS:

www.dti.gov.uk/sustainability/pdfs/finalrohs.pdf

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Standards Watch - Spotlight on EN61326

During the mid to late 1990s a number of product specific standards were developed which contained the emission and immunity requirements for particular products or product types. Amongst these was EN61326, "Electrical equipment for measurement, control and laboratory use" embracing equipment intended for professional, industrial process and educational usage.

Measurement equipment includes that which measures or records either an electrical or non-electrical quantity by electrical methods. Examples could include temperature sensors and transducers. Also included within the scope is non-measuring equipment such as signal generators and measurement standards.

Electrical control equipment as defined within EN61326 controls one or more output values and includes industrial process measurement and control equipment. Typical examples could include process controllers, process instrumentation and analogue or digital indicators and recorders. Finally, electrical laboratory equipment encompasses equipment which measures, indicates, monitors or analyses substances or is used to prepare materials. This equipment may be used in a laboratory or elsewhere.

In common with the product specific and generic standards, reference is made to basic standards for the test methods. For emissions, the reference standard is EN55022 (CISPR 22) and the applicable limit line is either Class A or Class B depending upon the environment in which the equipment is intended to be used. The definitions of Class A and Class B are derived from the reference standard. For immunity, the test methods and associated test levels are taken from the EN61000-4-X series of basic standards.

Performance Criteria: EN61326 takes a rather different approach to immunity testing in respect of the evaluation of test results through the performance criteria. The standard provides 'minimum immunity test requirements' which are broadly equivalent to those for the residential, commercial and light industrial environment as embodied in the appropriate generic standard. The performance criteria themselves are specified from A to D unlike the conventional approach taken in most standards, which list criteria A to C.

The performance criterion to be used is dependent upon the function of equipment, its operation and crucially

whether it is monitored or not. The categories defined within EN61326 are as follows:

- Essential operation (functional safety)
- Continuous unmonitored operation
- Continuous monitored operation
- Non-continuous operation

The most stringent performance criteria relate to equipment having an "essential operation" (functional safety) and least stringent relate to equipment having a non-continuous operation.

Amendment 1 – 1998: An amendment was published to EN61326 in 1998, which increased the number of environments within the scope of the standard from one to three; these being an industrial location, a laboratory or test and measurement area and a controlled electromagnetic environment.

The newly created Annexes A and B provide immunity test levels for equipment intended to be used in an industrial environment and a controlled electromagnetic environment respectively.

This amendment also introduced Annex C, which provides immunity test requirements for portable test and measurement equipment.

Amendment 2 – 2000: A second amendment to EN61326 was published in 2000, resulting in the inclusion of Annex D. This introduced test configurations, operational conditions and immunity performance criteria primarily for oscilloscopes, logic analysers and digital multimeters.

Future Changes: A third amendment is currently being prepared, but as of May 2004 has not yet been published. Assuming that it mirrors the requirements of the recently published IEC61326:2002, this will see the introduction of Annexes E and F. Annex E provides information for the testing and assessment of portable test, measuring and monitoring equipment used in low voltage distribution systems and Annex F provides the same information, but for transducers with integrated or remote signal conditioning.

York EMC Services Ltd - NEWS UPDATE



EMC in Railways Course Presented in Spain!

The highly acclaimed EMC expertise of York EMC Services Ltd has filtered into the Spanish Rail Industry.

York EMC Services Ltd were approached by the Polytechnic University of Catalunya to prepare and present a bespoke course on EMC in Railways, which was presented to a group of 15 Spanish engineers in July 2004.

Dave Welsh, Principal EMC Engineer and Les McCormack, Engineering Manager, made an excellent impression on course delegates and it is expected that the course will run again next year.

Chris Marshman, Managing Director, has already assisted in developing the company profile in Spain, being invited as a guest speaker on the EMC Directive in Barcelona earlier this year.