



## ATEX – Keeping on the Ball

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It is now almost a year since the compulsory full application of the ATEX “User” Directive (199/92/EC) throughout the European Economic Area and it is worth reviewing how things are progressing and looking at developments in the international field.

Ron Sinclair has been active in the certification of equipment for use in explosive atmospheres for over 30 years. Previously a designer of large electrical machines, he has developed expertise in all types of Ex protection while working for the UK Health and Safety Executive’s Baseefa and EECS. When HSE decided to terminate the certification activity in 2001, Ron led the staff into the creation of a re-formed Baseefa as a private company. Baseefa boasts over 300 years collective experience of hazardous area equipment certification, and is now working increasingly to support the users of such equipment.

Ron is active in standards development for hazardous area equipment: he is Chairman of BSI Committee GEL/31; Chairman of Cenelec Committee TC31; and a major contributor to the development of IEC standards as well as the CEN standards for non-electrical equipment. He attends the European Commission’s ATEX Standing Committee, and is well placed to interpret the latest thinking from the legislators. Last year, he was presented with the prestigious IEC 1906 Award, for his contributions to many of the working groups and maintenance teams of IEC Committee TC31.

### Are we making progress?

When the full provisions of ATEX Directive 199/92/EC came into force in July last year, it was obvious that, although most of the multi-nationals had made good progress, many other plant owners had not prepared themselves for the new legislation. Unlike the ATEX product directive 94/9/EC, the

user directive did not apply directly to the offshore installations, but it has certainly been taken to represent good practice by most of the enforcing authorities. The two directives are interlinked in such a way that it would not make sense to ignore one while applying the other.

There is one other major difference between the directives: 94/9/EC is a trading directive, whose sole purpose is to prevent concerns on safety prejudicing trade within the European Economic Area; 1999/92/EC is a safety directive, concerned with securing improvement in the safety of workers exposed to the potential for explosions in hazardous atmospheres. The second directive ensures that the products traded under the first directive are correctly selected, installed and maintained.

Because 1999/92/EC sets minimum requirements, it is up to the individual national authorities within Europe to prepare their own national legislation which may be more restrictive than the directive. In the UK, the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) has not significantly increased the requirements, but it has brought the relevant parts of the Dangerous Substances Directive into the same bit of legislation. (The remainder of the Dangerous Substances Directive are to be found in the CoSHH Regulations.)

At Baseefa, we are finding increasing interest in our training courses that prepare people for taking on various roles outlined in 1999/92/EC and conclude that there are many companies who have not yet begun to prepare the mandatory Explosion Protection Document. The guidelines to

the directive specifically encourage the incorporation of existing risk assessment documentation, rather than starting afresh, and the HSE in the UK have certainly advocated that the Explosion Protection Document should not stand alone from other assessments required, for example by the Provision and use of Work Equipment Regulations (PUWER) and the Management of Health and Safety at Work Regulations (MHSWR). The HSE policy is to place minimum additional documentation requirements on the management of the workplace, while still ensuring that the intent of the regulations is satisfied.

### Why the delay?

For many companies, creating the Explosion Protection Document is not an arduous task, but it does rely on having a team of people with the necessary background experience to be able to draft the Zoning Diagram and complete the ignition risk assessment on legacy plant. If that expertise is missing, the task can seem enormous and is likely to keep appearing on tomorrow’s “to do” list, rather than being tackled today. In addition to ATEX Notified Bodies such as Baseefa, there are many independent consultants who will be pleased to provide the necessary expertise and although the legal responsibility for the documentation cannot be subcontracted, it will often make sense for the actual document creation activity to be done with the help of external experts.

### What’s new?

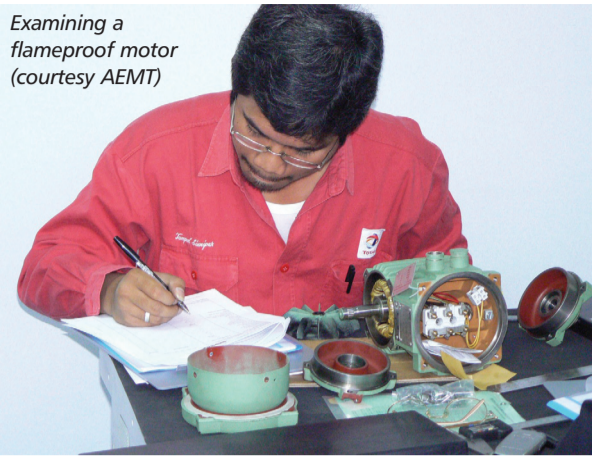
The international area classification standard (IEC 60079-10) is currently being revised and the new edition should be published later this year as IEC 60079-10-1. Of particular interest is the inclusion of specific information on flammable mists for the first time. Although this will be a welcome addition, no one should delay a zoning exercise, awaiting publication, since the fundamental presentation of the basic information has not changed. Of equal importance for the future will be the new IEC 60079-10-2 which constitutes a revision of IEC 61241-10, the equivalent area classification code for hazardous dust atmospheres. Here we expect to see some technical changes, affecting the extent of zones, but we must wait for the draft to receive its first formal vote before considering that the new text is generally agreed.

The new numbering system affecting the area classification standards is part of the move to cover both gas and dust in the IEC 60079 series. The next edition of the general requirements document IEC 60079-0 (due for publication later this year) will include both dust and gas/vapour requirements and will also introduce Equipment Protection Levels (EPLs). The EPL is defined in almost the same way as the related ATEX Category, but will use the lower case letters “a”, “b” and “c” rather than Category 1, 2 and 3. This should be no surprise to users of intrinsic safety equipment who have been familiar with levels of protection “ia” and “ib” over many years and are just now starting to get to grips with level “ic” which is replacing the “energy limited” requirements for Ex n equipment in IEC 60079-15. Encapsulation with



Large motor repair workshop (courtesy Cegelec)

Examining a flameproof motor (courtesy AEMT)



levels "ma" and "mb", although not so common, has also been with us for a few years and will soon be joined by "mc" in the next edition of IEC 60079-18.

Another recently published standard of direct interest to owners of hazardous area plant is the new edition of IEC 60079-19 relating to the repair and overhaul of Ex Equipment. A revision was well overdue as the original version of 1993 was based directly on the Beama/AEMT Guide of 1984. There have been considerable advances in repair techniques over those years, as well as new problems associated with changes in the construction standards. In addition to the traditional "gas" protection concepts, the new edition also deals with repair of dust protected equipment.

There are significant changes in the way the new standard addresses the repair of flameproof (Ex d) equipment and a major new section on "competency" rather than "training". Some types of repair permitted by the previous edition are no longer acceptable, but additional advice is given to assist other types of repairs.

Confidence in the competency of repair companies is a concern of many users of Ex equipment. With coincidental timing, the IECEx Scheme has launched its "Service Facility Certification Scheme", to enable repairers to prove their capabilities to the worldwide Ex community.

Altogether, this is a time where users of equipment, as well as manufacturers, need to keep abreast of the new standards as they are issued and check how they directly affect their own plant and processes.

Baseefa has become the first certification body in the world to have its IECEx scope extended to include electrical Service Facility Certification.

The move confirms Baseefa's place as world leaders in the Ex certification field, and follows on from the leading role that the Buxton company has taken in the issue of IECEx Product Certificates of Conformity throughout the world.

Managing director Ron Sinclair commented: "We see this as further evidence of our faith in an international system of conformity in hazardous area product certification. In an increasingly-international market, it has been a continual source of frustration that differing technical and conformity assessment criteria – such as the European ATEX directive – has often led manufacturers into having to make distinct products for different parts of the world.

"The intent of the IECEx Scheme is to cut out this waste and achieve a single certificate for a single product or service which is acceptable anywhere in the world. Our acceptance as the first certification body to have its remit extended into the Service Facility field is a major step forward, and we believe points the way to the future."

The IECEx Certificate of Conformity for Service Facilities covers the repair and overhaul of electrical equipment for use in hazardous or explosive atmospheres. Information and documentation is available on-line by contacting [www.iecex.com/service\\_facilities](http://www.iecex.com/service_facilities)

The on-line viewable certificates can only be issued by approved IECEx Certification Bodies (initially only Baseefa), and they attest that a service facility as described on the certificate has been independently assessed and found to have the appropriate equipment, competent staff and operating procedures which will provide confidence that the repair, overhaul or modification work complies with IECEx requirements, including IEC 60079-19. It also attests that the service facility site has been audited to verify that its quality system meets IECEx requirements, as specified in the IECEx Operational Document OD 014.

Allan Ogden, the internationally respected certification engineer and active member of a range of international standards committees, having recently joined Baseefa from Hawke International, is heading up this Service Facility programme.

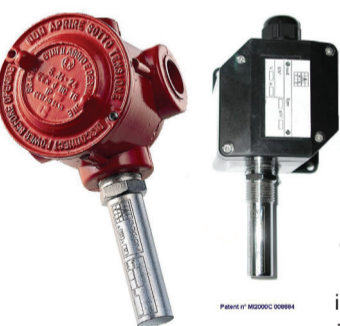
The IECEx Operational Manuals obtainable on the website given above include IECEx 03, which aims to ensure that each certification body, accepted by ExMC for the purposes of issuing IECEx Certified Service Facility Certificates, processes applications from Ex repair facilities with the same approach and technical rigour – known as "certifying the IECEx way". It outlines procedures for both the issuing and the maintenance of the validity of the certificates, including a description of each step showing the link between flowcharts and table; a description of the activity; related documents; the responsible person or party, and additional comments and remarks where appropriate.

Under the procedures for the maintenance of an IECEx Service Facility Certificate, guidance is provided for the certification body when conducting surveillance audits of the facility. It points out that to ensure the on-going credibility of the scheme, in addition to the scheduled audits, it may be necessary for the certification body to conduct unscheduled visits, to "check test" company activities where serious non-compliances have been identified, or to note such instances on the file for raising at the next surveillance audit.

The on-line documents also outline the procedures for the issuing of certification changes, including the extension of the scope of the certificate; the assessment procedures; technical requirements and quality management system requirements involved in the repair, overhaul and modification of Ex electrical equipment.



Allan Ogden at the IECEx Conference in Buxton 2005



## Intelligent Rate of Rise Heat Detector TMP2

The TMP2 series of fire and overheat detectors from **Oggioni** (Italy) includes an electronic circuit for signal conditioning generated by the transducer.

The electrical signal of transducer, is transformed into an engineered output with different interface solutions, current absorption, Proportional 4-20mA output or Relay contact.

The electronic card, reduced to the minimum size is made using SMT technology and placed directly into the unit probe.

TMP2 detectors are sturdy, shock and vibration resistant, the detectors are capable of sustaining impacts of up to 4g-force of 100 ms and vibration from 0.5 to 200 Hz with acceleration of 4 g.

TMP2 are compatible with any standard fire alarm control panel on the market, and particularly suitable in dangerous environmental conditions such as in the presence of corrosive elements or condensing steams.

Available also in the ATEX version for use in explosive atmospheres.

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## Intrinsically Safe Giant LED Clusters



The DA180 range of Giant LED Clusters, from **RTK Instruments Ltd** (UK), having a 66mm diameter lens, not only provides clear indication from a distance but is also visible from the side. Lenses are available in six super-bright colours and feature an integral current regulator to limit the current to 20mA. This ensures that all colours are matched to obtain consistent brightness across the range including white and blue. Up to two LED Clusters can be driven from a single IIC power source. The lamps are designed to provide a minimum of 100,000 hours of service life.

The DA180 Giant LED Clusters are ATEX Certified to Ex II 2G, EEx ia IIC T4 and are suitable for zones 1 and 2. The LED Clusters can be supplied as loose parts or pre-mounted in a stainless steel or polycarbonate IP65 box ready for immediate installation on site. The

DA180 range of Giant LED Clusters can be linked into either the LN1000 Intrinsically Safe Alarm Annunciator or one of a number of safe area annunciators. With the LED's lower power consumption, low heat dissipation and long life expectancy, the DA180 is an ideal indicator for safe and hazardous areas alike.

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## On-line measurement of water and hydrocarbon dew point in natural gas



### Condumax II: Hydrocarbon Dew Point Analyser

- Fully automatic on-line analysis
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- 0.5 °C hydrocarbon dew point accuracy
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