IEC TC 31 Committee Activities
Jim Munro
Chairman IEC Committee TC 31 Explosive Atmospheres
Managing Director Jim Munro International Compliance Pty Ltd

IECEEx INDUSTRY SYMPOSIUM DAY
Scope of presentation

- What is IEC Committee TC 31 and how does it operate?
- What standards is TC 31 responsible for?
- Developments in TC 31 work in recent years
- Current and Future Projects
- Developments with Non-Electrical Standards
- Relationship Between TC 31 and the IECEx System
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Current and Future Projects
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Relationship Between TC 31 and the IECEx System
What is IEC Committee TC 31 and how does it operate?

- Established by IEC (International Electrotechnical Commission) in 1948
- Scope of TC 31: *Equipment for explosive atmospheres*:
  - To prepare and maintain international standards relating to equipment for use where there is a hazard due to the possible presence of explosive atmospheres of gases, vapours, mists or combustible dusts.
TC 31 basic structure

Subcommittee SC 31G
Intrinsically-safe apparatus

Subcommittee SC 31J
Classification of hazardous areas and installation requirements

Subcommittee SC 31M
Non-electrical equipment and protective systems for explosive atmospheres
TC 31 Composition

- 3 sub-committees
- 15 working groups (3 joint, 2 ad-hoc)
- 5 project teams
- 21 maintenance teams
- 33 participating countries (P-members)
- 13 observer countries (O-members)
Deepwater Horizon oil rig - Gulf of Mexico
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What standards is TC 31 responsible for

- Currently over 30 standards are published by TC 31 with 4 new standards approaching publication
INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres – Part 31: Equipment for ignition protection
Atmosphères explosives – Partie 31: Protection du matériel des niveaux d'explosion
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Developments in TC 31 work in recent years

- Bringing all standards into the ‘79’ series – 60079 or 80079
- Combining gas and dust standards
- Publishing a Good Working Practice for TC 31
- Establishing a significant number of liaisons within IEC, with ISO, with IEEE and with UNECE
Developments in TC 31 work in recent years (continued)

- Establishing SC 31M
- Revision and combination of 60079-12, -20 & -1.1 on gas data for Ex into IEC 60079-20-1
- Commencement of a similar exercise for dusts.
- Equipment protection levels (EPLs)
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Current and Future Projects

- 31J/207/CDV (July 2012) - IEC 60079-17 Edition 5: Electrical installations inspection and maintenance
- 31/999/FDIS (July 2012) - IEC 60079-1 Edition 7: Equipment protection by flameproof enclosures
- 31/997/FDIS (June 2012) - IEC 60079-33 Edition 1: Equipment protection by special protection ‘s’
Current and Future Projects (continued)

- 31/985/CDV (March 2012) - IEC 60079-31 Edition 2: Equipment dust ignition protection by enclosure "t"
- 31/962/CDV (November 2011) - IEC 60079-2 Edition 6: Equipment protection by pressurized enclosures "p"
Current and Future Projects (continued)

- Strategic directions for TC 31 in Strategic Business Plan (SBP)
- On the IEC website (http://www.iec.ch) in the TC 31 Dashboard
- A draft revised plan (issued as 31/1006/DC) will be finalised in TC 31 plenary meeting in Oslo in October
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Developments with Non-Electrical Standards

- Establishment of ISO/IEC subcommittee within TC 31
- IEC SC 31M - Non-electrical equipment and protective systems for explosive atmospheres
- Able to develop ISO or ISO/IEC double logo standards
SC 31M scope

- To prepare and maintain international standards relating to non-electrical equipment and protective systems for use where there is a hazard due to the possible presence of explosive atmospheres of gases, vapours, mists or combustible dusts

  - Note: For the purposes of this sub-committee non-electrical equipment is defined as "equipment which can achieve its intended function mechanically". For the purposes of this sub-committee, 'Protective system' is defined as devices other than components of the equipment which are intended to halt incipient explosions immediately and/or to limit the effective range of an explosion.
New ISO/IEC Ex quality systems standard

- Publication in April 2011 of ISO/IEC 80079-34: Explosive atmospheres – Part 34: Application of quality systems for equipment manufacture
- Developed by SC 31M
- First published double logo standard
Application in IECEx

- ISO/IEC 80079-34 will replace IECEx Operational Document OD005-1, with OD005 to be withdrawn 1 January 2015
- Any initial assessment to ISO/IEC 80079-34 or OD005-1 to 31 December 2014
- Next audit of a manufacturer’s site to be conducted using both ISO/IEC 80079-34 or OD 005-1
- Subsequent audits to ISO/IEC 80079-34 only
- Comparison document between ISO/IEC 80079-34 and OD005 is ExTAG/247a/Inf
Next three ISO/IEC double logo standards

- ISO 80079-36 Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements
- ISO 80079-37 Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres — Non-electrical type of protection constructional safety "hc", control of ignition source "hb", liquid immersion "hk"
Next three ISO/IEC double logo standards (continued)

- These two standards cover protection technique requirements relevant for non-electrical equipment
- Part 36 complements and refers to IEC 60079-0, the general requirements, and introduces ignition hazard assessment
- Part 37 introduces explosion protection techniques not covered by current standards
- It will be possible to apply appropriate current techniques (eg Ex d) to non-electrical equipment
ISO/IEC 80079-38 *Explosive atmospheres - Part 38: Equipment and components in explosive atmospheres in underground mines*

- Standard specifies the explosion protection requirements for equipment that may be an individual item or form an assembly
- It covers electrical and non-electrical equipment
Next three ISO/IEC double logo standards (continued)

- All 3 standards have been issued as committee draft for voting (CDV) in June 2012
- Certification schemes such as IECEx could certify to these standards once they are published.
- IECEx has capability to certify to standards for other than electrical equipment and for equipment complying with ISO standards
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- All standards used for equipment compliance in the IECEx Certified Equipment Scheme are TC 31 electrical standards.
- For the same scheme ISO/IEC 80079-34 is now applied for manufacturers.
- For IECEx Certified Service Facilities Scheme, the standard used is IEC 60079-19 *Explosive atmospheres Part 19: Equipment repair, overhaul and reclamation*.
- TC 31 standards also used for the new IECEx personnel competencies scheme.
Conclusion

- TC 31 is very active committee within IEC producing over 40 international standards for Ex
- Developments have included the ‘79’ series, combining gas and dust, Good Working Practice, broadening liaisons, combining standards on data, and introduction of EPLs
- With establishment of SC 31M, non-electrical double logo standards are being developed
- There is a significant amount of standards development work in other areas
- TC 31 standards form basis for IECEx System
End of Session

IEC TC 31 Committee Activities