IEC TS 60079-46: A dialog on evaluating Equipment assemblies

Paul T. Kelly
Convenor, IEC/TC 31 PT 60079-46
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Agenda

1. Overview of path to today
2. IEC TS 60079-46 vs. DS 2015/001A: Key differences
3. Transition from DS to TS
4. Identifying an Equipment assembly
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Overview of path to today

1. IECEx CoCs involving IEC 60079-14 requirements
2. ExCB scopes expanded to include IEC 60079-14
3. ExTAG DS 2015/001A published
4. IEC/TC 31 PT 60079-46 (formerly AHG 46) formed
5. IEC TS 60079-46 published
6. Future of ExTAG DS 2015/001A?
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Key differences between TS and DS Requirement No. 1

**TS CoCs to show compliance with at least:**

- **IEC TS 60079-46**
- **IEC 60079-0**
- **ISO 80079-36**
Key differences between TS and DS Requirement No. 2

- **TS CoC to address “specific clauses of IEC 60079-14 that have been satisfied”**
- **No such TS statement regarding ExTR**
  - However, ExTR for IEC 60079-14 still required
Key differences between TS and DS Requirement No. 3

**TS Certificate to address:**
- Assembly at factory by manufacturer
- Assembly at the end-site
- Disassembly and reassembly
- Internal source of release area classification
- IEC 60079-14 clauses that were satisfied
- Level of inspection completed
- List of only other than Ex Equipment
Key differences between TS and DS Requirement No. 4

- **TS requires ExCB competencies in “the explosion protection aspects of the assembly being verified”**
- **TS does not directly mention competencies in IEC 60079-14**
Key differences between TS and DS Requirement No. 5

**TS addresses in the following Clauses:**
- **Clause 4, General requirements**
- **Clause 5, Design**
- **Clause 6, Construction and assembly**
Key differences between TS and DS Req. No. 5 (continued)

**TS Clause 4, General requirements:**

- General & explosion protection specifications
- *Internal source of release classification*
- Competencies
Key differences between TS and DS Req. No. 5 (continued)

**TS Clause 5, Design:**
- **Items relevant to explosion protection**
  - Electrical & Non-electrical items
- **Ex Equipment, Ex Components and other items**
  - Specific Conditions of Use
- **Documented Item list**
- **Interconnection wiring system**
- **Assembly drawings / dossier**
Key differences between TS and DS Req. No. 5 (continued)

**TS Clause 6, Construction and assembly**
- Disassembly and reassembly
- System interfaces
- Ignition hazard assessment (all hazards)
- Calculations
- Inspection & testing (including Annex C)
- Validation and documentation
- Instructions
Key differences between TS and DS Requirement No. 6

**TS requires:**

- “60079-46” as type of protection
- *External markings for Ex Components, other items*
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Transition from DS to TS

• **Effective immediately or transition period?**
• **What about existing CoC to DS?**
  - Will they be permitted to remain to DS?
  - Will they be permitted to be revised to DS?
  - Will they be required to upgrade to TS?
• **What about new CoCs in process during transition?**
  - Will they be permitted to be issued to DS?
• **IECEx transition can identify any issues with TS**
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Identifying an Equipment assembly

**TS defines Equipment assembly as:**

pre-manufactured combination of Ex Equipment, together with other parts as necessary, that are electrically or mechanically interconnected that are pre-assembled prior to being placed into service at the end-user site, and that can be disassembled and then re-assembled at the end-user site
Identifying an Eqpt. assembly (cont.)

TS Scope exclusions include:

- Equipment entirely covered by other types of protection
- IEC 60079-13, IEC TR 60079-16
- Installation & area classification at end-user site
- Group I applications
Identifying an Eqpt. assembly (cont.)

TS Equipment assembly examples, or not...
“Ex d” enclosure skid example
“Ex dhp” purged system example
“Ex eh” pump skid example
Turbomachinery example
Questions