Conformity Assessment:

*Introducing IECRE*

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February 26, 2014
Background

• **Industry Growth**
  • Demand increasing 20%+ per year
  • Significant increase in large commercial plants

• **Concern for Quality / Bankability**
  • Doubts about adequacy of existing standards
  • Need for improved understanding of reliability
  • Validation of product lifetime for investors

• **Need for Conformity Assessment**
  • Assurance of security of investments in PV
Roles & Responsibilities

• Standards Management Board (SMB)
  – Technical Committees => Write the standards
  – Manage nomination of experts and voting by National Committees

• Conformity Assessment Board (CAB)
  – Assessment Schemes => Evaluate implementation of standards in specific situations
  – Manage accreditation of Certifying Bodies
Existing CA Schemes

- **IECEE**
  - System for conformity testing and certification of **electrotechnical equipment** (specific categories including PV modules)
  - Oversees the Certification Body (CB) Scheme and recognizes CB Testing Laboratories (CBTL)

- **IECEx**
  - Conformity assessment for equipment operating in **explosive atmospheres**

- **IECQ**
  - Quality assessment system for **electronic components** and associated materials
New IEC Organization

IEC Central Office
Executive Committee

Standardization Management Board (SMB)
- Technical Committees (like TC82)
- Technical Advisory Committees
- Strategic Groups

Conformity Assessment Board (CAB)
- CAB Working Groups
  - IECEE
  - IECEx
  - IECQ
  - IEC RE
TC 88 - Wind Turbines

• Wind industry identified need to standardize “system aspect” of large complex projects
  – Not addressed by any existing CA scheme

• IEC structure / policy requires separation of standardization and CA activities
  – WT-CAC allowed to exist temporarily due to strong industry support

• Concept developed for new CA scheme (IECRE)
  – Similar requirements exist for Marine Energy projects as well as large PV plants
  – Specific differences in details apply for each industry
IECRE Concept

Conformity Assessment Offerings

CAB - Conformity Assessment Board

IECCEE  
System for Conformity Testing and Certification of Electrotechnical Equipment and Components

IECEx  
System for Certification to Standards Relating to Equipment for use in Explosive Atmospheres

IECQ  
Quality Assessment System for Electronic Components

IEC RE  
IEC Systems Approach for Certification to Standards relating to plant, equipment and services associated with Renewable Energy Systems

IECSOLAR Scheme

IECWIND Scheme

IECMES Scheme
• Proposal for a new RE System was endorsed along with the recommended next steps

• Decision 33/20
  • CAB approves the creation of a Renewable Energy Conformity Assessment System once the Basic Rules have been developed

• Decision 33/21
  • Establishes a working group to prepare a draft set of Basic Rules and report back at the next CAB meeting in New Delhi
IECRE kickoff meeting

• Oct-2013 in Aarhus, Denmark
  – Participation by TC82, TC88 (Wind Turbines) and TC114 (Marine Energy)
    • Seeking to include TC117 (Solar Thermal)
  – Working group (RE Forum) assigned to draft Basic Rules and Rules of Procedure for IECRE
    • Basic Rules are common to all
    • Rules of Procedure are industry-specific
Latest Progress

• IECRE Basic Rules
  • Draft reviewed by all 3 sectors
  • To be finalized at RE Forum meeting
    • Geneva 2-3 April 2014
    • CAB approval expected June 2014

• First Meeting of IECRE MC
  • To be hosted by USNC in Sept 2014
  • Location TBD in Colorado
    • (CSU or CSM)
IECRE Basic Rules

• Scope
• Governing documents
• Membership
• Organization
• RE Management Committee
• Officers, Executive and administration
• Committees reporting to the MC
• Legal provisions
• Standards
• Voting
• Finance
• Dissolution of the IECRE System
IECRE-PV Documents

- **PV Rules of Procedure (RoP)**
  - Draft reviewed in Madrid last week
  - Updated draft to be circulated 10-Mar
  - Final draft by Sept 2014

- **PV Operational Documents (OD)**
  - Based on IECEx system
  - Administrative details for processing requests, record-keeping, etc.
PV Rules of Procedure

- Scope
- Normative references
- Terms and definitions
- Acceptance of certification bodies
- Management of the certification system
- Extent of certification
- Aspects of certification
- Final evaluation
- Plant certificate
Aspects of Certification

- General
- Site conditions evaluation
- Design evaluation
- Equipment evaluation
- Structural and electrical evaluation

- Installation surveillance
- Output characteristics measurement
- Commissioning surveillance
- Operation and maintenance surveillance
Operational Documents

- OD 001  Procedures for the Issuing of IECRE-PV Certificates of Conformity, IECRE-PV Test Reports and IECRE-PV Quality Assessment Reports
- OD 002  IECRE-PV Scheme rules
- OD 003  Certificate of Conformity rules
- OD 004  IECRE-PV Scheme Fees
- OD 005  IECRE-PV “On-Line” system
- OD 006  Qualification of PVCB auditors
- OD 007  IECRE-PV Test certificates
PV Standards for Assessment

Module - 61215 / 61730
Inverter - 62109 / 62891
BOS - 62509 / 62093 + TBD

Manufacturing Quality System - 82/800/NP

System Design - 62738 / 62548
Installation - TBD
Commissioning - 62446 / 61829
Operation - 61724 + TBD
Gaps to be Closed

- **Standards Needed:**
  - Installation
  - Operation & Maintenance
  - BOS Components

- **RoP Issues:**
  - References to specific standards
  - Output measurement details
  - Type certification requirements
Thank you for your attention

Questions?

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