the standard in safety

Solar ABCs Product Safety Panel

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Underwriters Laboratories Inc.

Underwriters Laboratories Inc. (UL)

- An independent, not-for-profit product safety organization testing and certifying products
- Writing and publishing Standards for Safety
- Accredited by OSHA as a Nationally Recognized Test Laboratory (NRTL) and the Standards Council of Canada
- The only IECEE North American National Certification Body (NCB) for photovoltaic (PV) product certification
- North American market leader in certification

Standards

- Standards are requirements or recommendations based on best practices
- Created by bringing together the experience and expertise of interested parties
- Generally, the UL standard revision and development process is limited to Standards Technical Panel (STP) members

  - UL 1703 - PV panels, modules and module accessories

  - UL 1741 - Distributed power systems equipment and accessories, inverters, charge controllers, PV combiner boxes and utility interconnection systems equipment.

Solar ABCs and UL Standards

- Provides an open forum to industry and other interested parties
  - Comment on work being done
  - Suggest areas to Solar ABCs to be addressed
  - Make inquiries and ask questions about existing standards and requirements
- Identify and address gaps in standards requirements
- Provide additional opportunities to collaborate with research studies on related projects

Work Plan, Potential Issues (Y1)

PV AFCI

- Literature research study on national and international documents to identify related issues
    - Will look at other industries and technologies to assess applicability and usefulness
    - Anticipated end of life will be an arcing fault (based upon major UL customer opinion)
  - Split research among panel members
  - Panel leader will identify document database and other useful sources
- Issue - DC arc signature

Work Plan, Potential Issues (Y1)

PV Polymeric Materials

- Industry survey to identify causes and severity of PV module failures
    - Examining current testing procedures to adequately address test conditions and failure modes as seen in the field
    - Electrical, mechanical and environmental aspects will be reviewed
  - Panel will development requirements and test methods to address identified failure modes
  - UL will conduct research trials to identify initial areas to address
  - Panel will develop survey questionnaire for list-serve forum responses
- Issues – Review of electrical, mechanical and environmental aspects may require prioritization

Work Plan, Potential Issues (Y1)

- UL 1703 and IEC 61730
  - Identify and discuss differences between US and international standards
  - Future adoption and integration with national differences
- UL 1741 and IEC 62109
  - Identification of UL 1741 and IEC 62109 new or revised requirements for ungrounded PV arrays and non-isolated inverters, other additional equipment
  - Identify national requirements and differences between US and international standards (Y2)

Panel Working Process

- Process
  - Individual panel members will work on assigned activities, collaborating where necessary on joint projects
  - Use of website to post research and gather input and opinion
  - Quarterly meetings (either teleconference or in-person) to discuss and determine panel direction and actions
  - Minutes and annual reports will need to be reviewed by the panel for submittal to the PA

Stakeholders and Collaboration

- Stakeholders
  - Use web-based list serve to provide input to work underway and to ask questions
- Collaboration with PV/CSP Product Study Panel
- Collaboration with other Coordination and Implementation Panels
- Collaborations with other SAI partners

Solar ABCs contacts

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