Solar ABCs Product Safety Panel Stakeholder Teleconference
March 24, 4pm - 5pm EDT (Conference Call)

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Topics

• UL Fire Test Project
• Arc Fault Interrupter (AFCI) Requirements
• Status of UL 61730
UL Fire Test Project

• Meeting at UL to work through some of the test program details.
  – Phase 1 will include proof of concept testing, mostly with nonflammable mock modules.
  – This will give information on the shape of the flame in different installation geometries. The team will meet after the Phase 1 testing and then agree on the Phase 2 test plan.
  – Phase 2 will test actual PV modules based upon Phase 1 results.
Phase 1 Fire Test

– Initial 30 trials of “Proof of Concept Test” with steel PV module simulator to evaluate test parameters without burning modules.

  • Module to roof gap.
  • Distance from roof edge to leading edge of PV
  • Mounting rail orientation

This proof test program will help define the Phase 2 test program.
PV Arc Fault Interrupter (AFCI) Requirements

• 2011 NEC Proposal Passed Proposal Ballot.
• UL PV AFCI Ad Hoc Meeting Early April 09
  – Series vs parallel arc detection
  – Location of the PV AFCI within the PV wiring system
  – Test circuit
  – UL1699 Draft Outline of Investigation for PV AFCI
  – Arc Signature measurements
  – Testing possible PV arc hazards
    » arc fault detection tests,
    » unwanted tripping tests,
    » operation inhibition tests
Status of UL 61730

• Critical issues
  – PV Plastics issues need to be addressed first.
    • We are gathering and evaluating PV module operating field temperature data and using an existing UL746C program to reduce or remove the +20C that is applied to all PV plastics.
    • UL Subject 5703 expansion to include encapsulants. PV module component plastics evaluations can help reduce PV module testing
    • Working with NREL to develop Module test programs to evaluate complete modules for long term polymeric properties.
    • These solutions will be proposed to the IEC WG2 as a revision to IEC 61730-1.
Thank you

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