

LOG OF MEETING
DIRECTORATE FOR ENGINEERING SCIENCES

CPSA 6 (b)(1) Cleared

11/26/97
Pr

SUBJECT: Draft of Standard for Arc Fault Circuit Interrupters

DATE OF MEETING: November 4, 1997

PLACE OF MEETING: Underwriters Laboratories Inc.
333 Pfingsten Road
Northbrook, IL 60062

LOG ENTRY SOURCE: Doug Lee, ESEE *gal*

COMMISSION ATTENDEES:
Doug Lee, ESEE

NON-COMMISSION ATTENDEES:
David Dini - Underwriters Laboratories Inc.
David Dubiel - Underwriters Laboratories Inc.

SUMMARY OF MEETING:

Mr. Dini discussed the status of the draft of the Standard for Arc Fault Circuit Interrupters (AFCIs), Underwriters Laboratories Inc. (UL) subject 1699. The draft is currently being "cleaned up" from typographical errors and a few minor changes have been added before it is officially sent to UL. The draft of the standard was developed by the Circuit Breaker Section of the National Electrical Manufacturers Association (NEMA) with representation and laboratory research by UL.

Mr. Dini showed a video that was made by UL outlining and showing the testing that is performed on an AFCI.

AFCI Draft Standard Tests

- I. Efficacy Tests
 - A. Carbonized Path
 - B. Point Contact (Guillotine)
- II. Unwanted Tripping Tests
 - A. Inrush Current
 - B. Normal Operating Arc
 - C. Non-sinusoidal Waveform
 - D. Cross Talk
 - E. Multiple Load
 - F. Service Life
- III. Operation Inhibition Tests
 - A. Masking
 - B. EMI Filters
 - C. Line Impedance
 - D. Minimum Voltage

Additional performance tests from the standard for Ground-Fault Circuit Interrupters, UL 943, include: humidity conditioning, leakage current, voltage surge, environmental evaluation,

dielectric voltage - withstand, resistance to environmental noise, and abnormal operation tests. Short circuit tests and other circuit breaker tests will come from the standard for Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures, UL 489.

Mr. Dini and Mr. Dubiel gave a tour of the AFCI testing lab showing the test equipment required to test the AFCIs and the various loads that are tested. In addition, some of the earlier prototypes and test equipment were shown.