

April 3, 2003

Arc Fault Circuit Interrupters

By: William N. Clark, Esq.

Cozen O'Connor

1900 Market Street, Philadelphia, PA 19103

Phone: (215) 665-2000. Fax: (215) 665-2013.

E-mail: wclark@cozen.com

Manufacturers of electrical equipment have developed a new product they claim to be at the forefront of circuit protection technology. This new product is called the Arc Fault Circuit Interrupter (AFCI). AFCIs provide protection against arcing in fixed wiring, appliance cords and extension cords. The United States Consumer Protection Safety Commission ("CPSC") and National Association of State Fire Marshals ("NASFM") have called AFCIs the "most promising fire protection technology since the advent of the smoke detector."

1. How the AFCI Works

Conventional circuit breakers respond to overloads and short circuits – they do not protect against arcing conditions that produce erratic current. Like circuit breakers, AFCIs protect against short circuits and overloads, but also protect against arcs by electronically identifying the unique current and voltage characteristics of

arc faults and de-energizing the circuits when arc faults occur.

2. The Legal Standards Applicable to AFCIs

UL 1699 "Standard for Arc Fault Interrupters" was first published in February of 1999. UL 1699 provides the design and operational criteria for AFCIs. The National Electric Code (NEC) provides the guidelines for the minimum required use of AFCIs. In 1999, NEC 210-12 was amended to require AFCIs to protect all branch circuits providing power to outlets in dwelling unit bedrooms (new construction) effective January 1, 2002.

The NEC is a model code for electrical wiring. Individual states and authorities having jurisdiction have adopted their own initiatives and schedules for the required installation of AFCIs. For example, Vermont has adopted an electric code that requires AFCIs to protect all branch circuits for all living spaces for all new

Principal Office: 1900 Market Street Philadelphia, PA 19103 (215) 665-2000 (800) 523-2900	Charlotte (704) 376-3400 (800) 762-3575	Dallas (214) 462-3000 (800) 448-1207	New York (212) 509-9400 (800) 437-7040	San Francisco (415) 617-6100 (800) 818-0165	Washington, DC (202) 912-4800 (800) 540-1355
Atlanta (404) 572-2000 (800) 890-1393	Cherry Hill (856) 910-5000 (800) 989-0499	Las Vegas* (800) 782-3366	Newark (973) 286-1200 (888) 200-9521	Seattle (206) 340-1000 (800) 423-1950	Wichita (316) 609-2177
	Chicago (312) 382-3100 (877) 992-6036	Los Angeles (213) 892-7900 (800) 563-1027	San Diego (619) 234-1700 (800) 782-3366	W. Conshohocken (610) 941-5400 (800) 379-0695	Wilmington (302) 295-2000 (888) 207-2440

International Office: London 011 44 20 7864 2000

**Affiliated with the Law Offices of J. Goldberg.*

construction starting January 1, 2001. Vermont's code requires greater AFCI protection (all circuits in living areas as opposed to just bedrooms) a full year earlier than the NEC's required protection for bedrooms.

It is unclear what additional AFCI requirements will be adopted between now and the 2005 edition of the NEC. However, several jurisdictions have already taken steps to increase the requirements for AFCI protection beyond the requirements contained in the NEC. For example, the 2002 Massachusetts Electrical Code requires AFCI protection for dwelling unit bedrooms for existing structures where panel boards are replaced (effective January 1, 2005). Similarly, the City of St. Paul, Minnesota, interprets the NEC to require AFCI protection for bedroom additions to existing structures and when new outlets are installed in existing bedrooms.

3. Potential Avenues of Recovery

A. Recovery Against Manufacturers

The most obvious, but potentially most difficult, avenue of recovery when an AFCI fails is against the manufacturers of AFCIs. Recovery against manufacturers will be difficult due to the recognition by UL, AFCI manufacturers and other professionals that AFCIs mitigate against arcs and cannot completely eliminate arcs under every circumstance. Despite the potential difficulty in pursuing a case against the manufacturer of an AFCI, a thorough investigation of an electrical fire in a structure containing AFCIs by an electrical engineer may assist in developing a viable recovery theory.

B. Contractors

1) Failing to Follow the Code

Another theory of recovery is against builders and contractors who do not incorporate AFCIs in panel boxes for new construction after

January 1, 2002, in violation of the NEC. Local codes and standards should be consulted to

determine if AFCIs were required to protect the circuit that caused a particular fire. Depending on the individual jurisdictional requirements, you may find that the builder or contractor violated the code by failing to install AFCIs.

One unresolved issue under the code is whether the National Electric Code requires AFCIs in newly constructed hotels, motels and similar structures where there are bedrooms/sleeping areas. In such cases, a strong argument exists that the overall intention of the life safety aim of the code is not satisfied unless the design professional or contractor installed (or at least recommended the installation of) AFCIs for newly constructed hotels, motels and similar structures.

2) Failing to Install or Recommend the Installation of AFCIs

In addition to cases arising out of the failure to install code-required AFCIs, theories may be formulated resulting out of a contractor's failure to warn and recommend that additional AFCIs be placed into living spaces. For example, in new construction, the issue is whether the design professional, general contractor or electrical subcontractor should have recommended to the purchaser of the residence that AFCIs be installed to protect branch circuits in all living areas.

C. Recovery Against Appliance/Cord Manufacturers

Manufacturers have developed AFCI/LCDI technology for cord sets and extension cords. Black & Decker has incorporated this technology in its new heaters and toasters. Fire Shield and Black & Decker may have set the design benchmark for all manufacturers of cords and appliances. When faced with a fire caused by a power-strip, extension cord or appliance cord, the insured should be interviewed as to the date of



purchase. Possible recovery potential may exist against the appliance/cord manufacturer for failing to include AFCI technology in recently manufactured products. In cases involving cords

that have AFCI technology, there may be failure to warn or manufacturing defect theories of recovery present.

For additional information concerning
Cozen O'Connor's Subrogation and Recovery Program, please contact:

Elliott R. Feldman, Esquire
Chairman, Subrogation and Recovery Department
(800) 523-2900
(215) 665-2071
efeldman@cozen.com
www.cozen.com

©Cozen O'Connor 2003. All Rights Reserved.

Comments in the Cozen O'Connor Subrogation and Recovery Alert are not intended to provide legal advice. Readers should not act or rely on information in the Alert without seeking specific legal advice from Cozen O'Connor on matters which concern them.