

BALLOT ITEM NO. 2. UPGRADING REQUIREMENTS FOR THE BRANCH/FEEDER AFCI

Ballot Results:

Affirmative; 9 Negative; 10 Negative without Comments: 1 Abstain; 1 Not Returned 3

Negative Comments Received

Leviton Mfg. Co.
Little Neck, NY
December 4, 2001

Our reasons for voting no on Proposal 2 are as follows: No listed devices are available for public use. AFCIs that would meet the proposed requirements for an upgraded branch feeder device may not be acceptable in the field due to false tripping scenarios not anticipated by the requirements. We believe that this is the reason why there are no combination AFCIs presently available in the field even though a UL Listing was granted quite some while ago. One might deem such Listings as "defensive" and being utilized solely for the manipulation of standards making bodies and regulatory authorities, as opposed to actually placing safety products in the stream of commerce and widespread field usage

Steve Campolo
STP 1699 Member

Hubbell Inc. (Delaware)
Bridgeport, CT
December 11, 2001

If Proposal 1A is accepted and mounted at or near the over-current protection range, it provides the same protection as the proposed branch/feeder arc-fault circuit-interrupter. This proposal would then be redundant and not required.

John Goodsell
STP 1699 Member

Cutler-Hammer Inc.
Pittsburgh, PA
December 7, 2001

Branch/Feeder AFCIs are presently available from at least four major manufacturers. Their characteristics are well known based on presentations, demonstrations, code discussions and publications covering the past five years. Based on those characteristics, the Code has mandated their application for the protection of branch circuits supplying outlets installed in dwelling unit bedrooms effective 1/1/2002.

The present proposal would obsolete these present Branch/Feeder AFCIs that meet the present UL1699 requirements. Here it is noted that Branch/Feeder AFCIs have been commercially available for several years. They have been demonstrated to be effective in enhancing fire safety, and they have been shown to be resistant to unwanted tripping.

Making the present Branch/Feeder AFCIs obsolete would occur at a time when there is no commercially available "Upgraded Branch/Feeder AFCI". The proposer may well state that "the availability of the technology for the combination AFCI performance has now been demonstrated by at least two companies", but the fact is there is no UL Listed "Upgraded Branch/Feeder AFCIs" for a load-center. Further, the UL Listed Combination AFCI, in an outlet configuration, is not commercially available. For this proposal to be taken seriously, the designs would have to be on the market for several years. During that time they would have to demonstrate, in the field, that they are effective in enhancing fire safety and that they are resistant to unwanted tripping. In fact, in order to obsolete the present designs of Branch/Feeder AFCIs, they would have to demonstrate an increased effectiveness in enhancing fire safety.

This proposal might receive more sympathetic treatment if the characteristics of the Combination AFCI were not already present in UL 1699. In fact examination of the proposed Table 50.2 on page A17 shows that the "Upgraded Branch/Feeder AFCI" requirements would be identical to the requirements for the Combination AFCI. Thus it is already possible to obtain a UL Listing for an AFCI, located at the origin of the branch circuit or feeder, with the requirements suggested by the proposer. Such devices could presently appear on the marketplace, would be code-compliant, and could compete with existing Branch/Feeder AFCIs. But to obsolete existing designs would be unwarranted and exclusionary.

It is also noted that UL, in Impact Statement #2 on page B2, suggests that the requirements, if mandated, would become effective five years after publication of the revised standard. However, this extended implementation date should not influence STP members towards acceptance of the proposal. If these devices become commercially available during the next several years, if they are shown to more effective for fire protection and if they remain robust against unwanted tripping, then a proposal could be considered at a future STP meeting. But manufacturers, in 2002, should not be facing a mandated change in 2007 based on expected changes in technology and expected improvements in field performance. This proposal should be defeated regardless of the implementation date.

Clive Kimblin
STP 1699 Member

Cooper Wiring Devices/Eagle Electric
Long Island City, NY
December 11, 2001

The present standard allows AFCI protection of an entire branch circuit (in-wall wiring and extension wiring) to be accomplished by using a branch/feeder device and an outlet circuit device together on the same branch. While this proposal would obviate the need for these two devices to be used together, it would also require that the Branch/Feeder do it all. Manufacturers should have the option of listing a Circuit Breaker type AFCI that either protects only Branch/Feeder wiring or a Circuit Breaker type AFCI that protects the "entire" branch circuit. Right now these options exist in the "Branch/Feeder" type or the "Combination" type. Requiring the Branch/feeder type to do everything would be restrictive.

Howard Leopold
STP 1699 Member

Underwriters Laboratories Inc.

Melville, NY
December 4, 2001

We believe that this proposal is premature, although we agree with the concept. More field experience is needed with current designs and the introduction of NEC applications with AFCIs before proposing required enhancements to current proven designs.

Paul Notarian
STP 1699 Member

City of San Diego
San Diego, CA
December 4, 2001

I do not believe that a standard should incorporate language stating that a device meets the requirements of a particular provision of the NEC. That is a decision made by the AHJ. A standard should address the operational safety of the device. I therefore reject this proposal due to language in 1.5.1.

Timothy Owens
STP 1699 Member

Pass & Seymour/Legrand
Syracuse, NY
December 11, 2001

This proposal recommends revising the definition of a Branch/Feeder AFCI and adding paragraph 1.5.1 stating that the redefined Branch/Feeder AFCI provides the protection indicated in NEC Section 210.12. The essence of this proposal is to require both series and parallel arc detection and mitigation in circuit breaker type AFCIs. We agree that series arc protection is just as important as parallel arc protection. In fact much of the rationale supporting this proposal is applicable in supporting Proposals 1A and 3.

This proposal, however, should be rejected for the following reasons:

Proposed paragraph 1.5.1 stating that the redefined Branch/Feeder AFCI provides the protection indicated in Section 210.12 of the NEC should not be included in the standard. It is inappropriate to place an interpretation of the NEC in a UL standard. NFPA has a process for official interpretations and it does not include adding a few words to a UL standard. Further, the proposed wording is in direct contradiction to the action taken by Code Making Panel 2 (CMP2). When considering the AFCI proposals for the 2002 NEC, CMP2 concluded that including specific types of AFCI's in Section 210.12 is not necessary since the objective of the NEC requirement is to indicate that the branch circuit be provided with AFCI protection. A number presentations made to CMP2 by UL and others explained the arc fault protection capabilities of different types of AFCI's. CMP 2 made an informed decision not to include specific AFCI types in Section 210.12.

Thomas Packard
STP 1699 Member

General Electric
Plainville, CT
December 4, 2001

This proposal appears to eliminate present UL Listed, commercially available, Branch/Feeder AFCIs and replace them with devices which are not presently UL Listed and are not commercially available. Further, to consider replacing the present branch circuit AFCIs with these "upgraded" devices when they have not undergone the rigorous field testing of the present devices is extremely risky. These devices may be subject to nuisance tripping and, as such, require extensive field testing before they should be so cavalierly introduced into the standard.

Philip Piqueira
STP 1699 Member

Technology Research Corporation
Clearwater, FL
December 11, 2001

There already exist the two classifications. Users and code developers have a choice of specifying the type of AFCI protection. We see no reason to eliminate one.

Edward Schiff
STP 1699 Member

Lutron Electronics
Coopersburg, PA
December 11, 2001

The addition of paragraph 1.5.1 does not belong in the UL standard. In addition, a good definition of the Branch/Feeder AFCI is contained in proposal 3. The capabilities of the proposed upgraded device are already defined by the combination AFCI.

Robert Spehalski
STP 1699 Member

Affirmative Comments Received

Celanese Acetate
Rock Hill, SC
December 7, 2001

This proposal offers the most immediate method to provide a complete solution to arc faults in branch circuit wiring. If the combination AFCI is technologically available as indicated in the rationale for item 2, then the standard should move to that complete solution. At least, the standard should make it clear that only those

devices passing all tests which are or could be associated with branch circuit wiring can be considered as meeting the requirements of NEC 210.12. A limited solution should not be acceptable when there is a complete device available.

Joseph Roche
Public Review Participant

General Machine Corp.
Fairfax Station, VA
December 4, 2001

It is entirely appropriate to have UL map to the performance targets identified in the NEC. If not the NEC, then who else could better identify needs?

James Ruggieri
STP 1699 Member

UL RECOMMENDED DISPOSITION OF ITEM 2

This proposal did not achieve consensus, and unless sufficient members change their vote, the proposal is not approved and will not be processed further.