

NFPA 70®-Proposed 2020 Edition

National Electrical Code®

TIA Log No.: 1452

Reference: 240.87(C) and Informational Note (new)

1. Revise 240.87(C) to read as follows:

240.87(C) Performance Testing. The arc energy reduction protection system shall be performance tested by primary current injection testing or another approved method when first installed on site. This testing shall be conducted by a qualified person(s) in accordance with the manufacturer's instructions.

~~Performance testing of an instantaneous element of the protective device shall be conducted by a qualified person(s) using a test process of primary current injection and the manufacturer's recommended test procedures.~~

A written record of this testing shall be made and shall be available to the authority having jurisdiction.

Informational Note: Some energy reduction protection systems cannot be tested using a test process of primary current injection due to either the protection method being damaged such as with the use of fuse technology or because current is not the primary method of arc detection.

Substantiation: The language established by CMP-10 in the Second Draft of the 2020 NEC in SR 8030 recognizes the need to performance test the system for providing energy reduction for electrical worker safety, however it currently requires only primary current injection testing of "instantaneous elements of the protective device." Not ALL energy reduction systems will utilize the instantaneous functionality of the overcurrent protective device to meet the main requirement to reduce arc energy. Therefore, the language must be revised to reference the manufacturer's instructions that will ensure the system is properly performance tested without: 1) performing unnecessary tests, 2) damaging the equipment, or 3) omitting necessary performance testing for the specific technology.

The informational note is also added to this new requirement to alert the reader of potential equipment damage and that other means of compliance may be necessary in accordance with the manufacturer's instruction to conduct the performance test to comply with 240.87(C).

Emergency Nature: The standard contains an error or an omission that was overlooked during the regular revision process. The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification for the action.

The performance testing requirement for energy reduction is new for the 2020 NEC. Numerous voting comments supported performance testing of the energy reduction system with similar concerns about omission of testing on certain technology and requiring unnecessary testing on other systems. Therefore, after the second draft meeting, a task group from CMP-10 consisting of Jim Dollard, Alan Manche, Tom Domitrovich, David Williams, Roy Sparks and Scott Blizard reviewed the voting comments submitted by many of the committee members. The comments

recognized that performance of an energy reduction system may not be dependent on the instantaneous element of the overcurrent device. Other methods such as light detection sensors or single-use items such as fuses or a crowbar where the instantaneous function of the overcurrent device is not utilized or does not exist must be tested according to the manufacturer's instructions. Not ALL energy reduction systems will utilize the instantaneous functionality of the overcurrent protective device to meet the main requirement to reduce arc energy. Therefore, the language must be revised to reference the manufacturers instructions that will ensure the system is properly performance tested without performing unnecessary tests, tests that could damage the equipment, or omit necessary performance testing. The second paragraph can impose unnecessary testing that serves no role in enhancing safety. The revised language addresses inadvertent impact and complete omission of performance testing on some arc energy reduction systems. This TIA request has been circulated to the members of CMP-10 and the following members replied in support of moving this TIA forward; Jim Dollard, Scott Blizard, Kevin Lippert, Ken Rempe, David Williams, Ed Koepke, Paul Barnhart, Danish Zia, Nathan Philips, Peter Walsh; Steve Stuble, Steve Townsend, and Alan Manche.