

NFPA 86-2019 Edition
Standard for Ovens and Furnaces
TIA Log No.: 1439

Reference: 8.10.6

Comment Closing Date: May 8, 2019

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www.nfpa.org/86

1. Revise 8.10.6 to read as follows:

8.10.6* A line burner, pipe burner, or radiant burner with flames propagating 3 ft (1 m) or longer shall ~~have at least one flame detector installed to sense burner flame at the end of the assembly farthest from the source of ignition.~~ be in accordance with one of the following specifications:

(1) Those having a capacity of 150,000 Btu/hr (44 kW) or less shall have at least one flame detector installed to sense burner flame.

(2) Those having a capacity greater than 150,000 Btu/hr (44 kW) shall have at least one flame detector installed to sense burner flame at the end of the assembly farthest from the source of ignition.

Substantiation: Prior to the NFPA 86-2019 edition, typical modern bakery ovens were equipped with flame monitoring and supervision at every burner. The burners were not connected via any type of flame propagation device, nor were they close enough together to be considered “adjacent”. Therefore, the requirement for opposite side flame sensing did not apply (see NFPA 86-2015, 8.10.6), and the flame sensing function took place at the same location as the source of ignition. The bakery oven burners in question are usually over 3’ in length, and the typical bakery oven is equipped with anywhere from 50 to 300 or more line or pipe style burners, typically with firing rates of 65,000-90,000 Btu/hr each. The basic mechanical design of these ovens hasn’t changed since the 1940’s. The control systems may have been improved, and flame supervision has been added, but the basic box design is incredibly robust and really doesn’t need to be altered. Inherent in that design, however, is the nearly total lack of access to the opposite end of the burners from the point of ignition. That side of the oven is covered almost entirely in air handling ductwork. The major problem is that while ovens of recent manufacture or upgrade have flame monitoring and supervision, there are still a LARGE number of ovens in operation that have no flame monitoring/supervision/safeguards whatsoever – what we call constant spark ignition. At the end of the preignition purge cycle, ignition power is applied to the ignitors, with no automatic flame verification. While ignition is supposed to be checked by human personnel, there is no guarantee that it is, and any burner with its manual gas cock open has a combustible fuel/air mixture flowing through it, whether it’s lit or not. Because of the NFPA 86-2019, Paragraph 1.4.1 “Grandfather Clause”, as long as these ovens aren’t altered, they are acceptable to remain in operation. The baking industry is VERY low margin. In addition, because the industry is producing fresh goods that can’t be pre-manufactured and stored to any degree, retrofit downtimes become extraordinarily expensive due to products having to be made in other facilities (sometimes by other manufacturers via contract) with the associated employee overtime as well as added distribution costs. The combined result of modifying the ovens for opposite side flame sensing and the downtime costs associated with relocated manufacturing is that bakeries that own these constant spark ovens, especially small regional bakeries that may only have one

or two facilities, will most likely choose to NOT upgrade their ovens due to the added expense of having to meet the new requirement for opposite side flame sensing. The American Society of Baking is dedicated to the safe operation of the facilities in our industry. We feel very strongly that allowing our members to safely apply flame monitoring and supervision while being able forgo the opposite side requirement will encourage them to bring their ovens up to that level of safety instead of “living with” an outdated, significantly less safe design. Larger capacity burners would still be required to have opposite side flame detection.

Emergency Nature: The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation. 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 of the action.

Across the baking industry, there are a minimum of 20 oven owners who have requested quotations for upgrading the constant spark based ignition systems on their ovens to a system that includes flame detection and supervision. At least 75% of these bakeries have quotations from the previous budget year for the same thing, but based on the NFPA 86 2015 edition with only near side flame detection required. These bakeries were expecting only minimum price increases and were ready to approve these upgrades. However, due to the added cost and time required to implement an opposite side flame detection system, these bakeries are indicating that they will instead choose to live with their existing constant spark ignition system, even though it’s less efficient and has proven to be much more hazardous. Since the money has already been approved, these bakeries have suggested that passage of this TIA would result in re-approval and implementation of these projects.

Anyone may submit a comment by the closing date indicated above. Please identify the TIA number and forward to the Secretary, Standards Council. [SUBMIT A COMMENT](#)