



Position Statement

Residential Range Top Safety

Submitted by the Fire & Life Safety Section Board

The International Association of Fire Chiefs (IAFC), through its Fire & Life Safety Section (FLSS), is adopting this position paper on residential range top fire safety so fire chiefs and other fire safety professionals can better respond to inquiries about residential cooking safety and more effectively develop community risk reduction outreach programs.

Cooking is the leading cause of home fires and fire injuries

Fires beginning with cooking appliances account for the largest share of home structure fires and associated fire injuries in the United States and Canada. Electric ranges are by far the leading cause of home cooking appliance fires.

Most home cooking fires involve frying on electric ranges

Range fires were involved in 77% of home structure fire injuries involving cooking equipment and accounted for 84% of all fire deaths involving cooking appliances. Seventy-four percent of range fire injuries involve stovetop cooking, and frying accounted for 59% of range fires.

Unattended cooking is a major cause of range fires

Unattended cooking is a factor in the majority of home electric range fires. Physical conditions such as falling asleep, impairment by alcohol or drugs, or limitations of the cook due to age are all contributing factors. Distractions that pull the cook outside of the kitchen (doorbell, screaming child, social interactions) are another. Due to the nature of these behaviors, public education cannot be the sole means of addressing the cooking fire problem. An engineering solution can make it less likely that those lapses in safe behavior will result in tragedy.

Technologies that can address the cooking fire problem

There are several technologies designed to prevent fires or mitigate cooking fires, each with its advantages and disadvantages. These include smoke detection systems, range top suppression systems, home fire sprinklers, and ignition prevention technologies. This paper focuses on ignition prevention technologies, which can prevent range top fires from igniting in the first place.

Ignition prevention

Given the nature of fire injuries associated with range top fires, the best way to eliminate these injuries and range top fires is to prevent ignition from occurring in the first place. One way to reduce the frequency of ignition is to design the range top so it will not readily ignite oils, greases and cooking materials.

This can be done by limiting range top temperatures, including automatic shut off timers on heating elements that require manual intervention to reset, or other similar means. Temperature-limiting technologies may be the best solution to reducing cooking fire injuries and range top fires.

Around the world, several companies produce temperature-limiting electric and gas burners and appliances that are designed to prevent ignition of common cooking materials. One concern with temperature-limiting solutions is whether the cooking appliance can meet the user's cooking expectations, such as being able to sear meat and boil water quickly. Existing installations of temperature-limiting technologies suggest that users are satisfied with cooking performance.

Product standards and regulations

Electric ranges sold in the U.S. and Canada are listed by organizations such as UL and CSA in accordance with their electric range product standards. Neither UL nor the CSA standards include temperature limits on common cooking elements or the cooking vessel itself. The consensus bodies that develop requirements in these standards, which include significant industry representation, have not adopted any mandatory temperature limiting requirements for these standards.

The Consumer Product Safety Commission (CPSC) is interested in temperature-limiting solutions, and over the past fifteen years a number of fire safety organizations, including the CPSC have been researching issues related to temperature limits for electric ranges, with favorable results.

IAFC research report

In 2012 the IAFC Fire & Life Safety Section established a task group that reviewed a large quantity of data and studies on cooking fire safety, and documented 12 key observations and conclusions that fire chiefs need to know to understand this problem. They also described eight actions that can be taken by the IAFC and fire chiefs to address range top fire safety concerns. This information is published in the *Protecting Life and Property and Reducing Injuries from Fires Originating on Home Ranges* report, which is posted on the IAFC website.

Call to action

The IAFC is pursuing some of the recommendations included in the report to address this significant fire safety issue. Fire chiefs and IAFC members are urged to read the report, get staff involved in this issue, and be a force to help address this real fire and life safety problem that tragically affects citizens in our communities on an all-too-frequent basis.

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