



1111 19th Street NW > Suite 402 > Washington, DC 20036
t 202.872.5955 f 202.872.9354 www.aham.org

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Via E-Mail

Office of the Secretary
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Mr. Jay Howell
Hazard Identification & Injury Reduction
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Re: Report on refinement of Temperature-Limiting Control
Systems for Preventing Oil Ignition on Gas and Electric Cooktops

Dear Mr. Stevenson & Mr. Howell:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the Draft Report, "Refinement of Temperature-Limiting Control Systems for Preventing Oil Ignition on Gas and Electric Cooktops," Primaira, LLC (September 2015) (Primaira Refinement Report). We thank the Consumer Product Safety Commission (CPSC or Commission) for seeking public comment on the Primaira Refinement Report prior to issuing a final report.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM is also a standards development organization, accredited by the American National Standards Institute (ANSI). The Association authors numerous appliance performance testing

standards used by manufacturers, consumer organizations and governmental bodies to rate and compare appliances. AHAM's consumer safety education program has educated millions of consumers on ways to properly and safely use appliances such as cooking products, portable heaters, and clothes dryers.

AHAM has been involved with cooking safety initiatives for many years. AHAM agrees with the Commission that the problem of surface cooking fires is broad, complex, and requires a multi-pronged approach that includes consumer information as well as further improvement to the relevant voluntary standards. We and our members have invested and continue to invest heavily in education and customer service to help educate consumers about proper cooking practices. And our top priority is to design appliances that are as safe as they are useful. To this end, we have worked cooperatively with the Commission on the issue of surface cooking fires that start with ignition of cooking materials in a pan. Together with the Commission, in 2000 AHAM commissioned Arthur D. Little to fund an independent assessment of the technical, practical, and manufacturing feasibility of technologies to address surface cooking fires. We were also involved in the 2002 UL 858 Standards Technical Panel task group. AHAM also serves with CPSC on the Fire Protection Research Foundation (FPRF) steering committee which has conducted and continues to conduct research to further understand the characteristics of unattended cooking fires. These initiatives provided important insights into the dynamic and complex issue of cooking fires associated with unattended cooking, but they also raised technical issues that required further development and study.

Most recently, for the past three years, AHAM and its members have been actively working together with the Commission to reduce the incidence of unattended cooking fires that start with ignition of oil. AHAM contracted Primaira, LLC (Primaira) to do testing of ignition prevention capabilities of its pan temperature control system in electric cooktops in 2013 and again in 2014 to conduct additional tests on higher wattage elements and additional units. We invited CPSC to participate in the development of the test plan for that testing and have invited CPSC to participate in meetings between us, our members, and Primaira. We collaborated with CPSC (and other stakeholders) to propose and finalize a voluntary safety standard that includes a test procedure intended to reduce the incidence of cooking fires on coil element electric cooktops. And we look forward to continued collaboration to develop similar standards for gas and glass ceramic cooktops. As the Commission knows, more study is needed before those standards can be developed and AHAM and its members are working toward that end.

Under contract with the Department of Health and Human Services, Primaira performed testing to provide additional information to support development of requirements for the voluntary safety standards for gas and electric ranges to reduce surface cooking fire incidents. Specifically, Primaira performed four subtasks to provide additional insight and understanding of control system requirements for pan-temperature limiting: 1) determine gas burner/electric element minimum power rating for ignition; 2) optimize gas burner cycling during temperature-limiting operation for the burner control system that Primaira developed under a previous contract; 3) replace the resistance temperature detector (RTD) sensor used in prototypes with less expensive thermistor-type sensors; and 4) evaluate the interaction between existing glass temperature-limiting devices and pan temperature-limiting controls in electric, glass ceramic cooktops.

Although AHAM fully supports CPSC's efforts to do research to aid in its and our efforts to develop supporting rationale for requirements for an eventual voluntary safety standard to reduce the number of unattended surface cooking fire incidents, we believe it is critical to properly characterize the results of the research and to recognize the significant amount of independent study and development in which manufacturers need to engage in order to implement design changes and a voluntary safety standard.

As we commented with regard to Primaira's previous study on gas cooktops, "Testing of Ignition Prevention Capabilities of a Pan Temperature Control System in a Gas Cooktop" (Primaira Gas Cooktop Report), gas burner systems will need to be completely redesigned in order to accommodate a pan-bottom sensor technology. Accordingly, accommodating a pan temperature control system in a gas range will be a complex undertaking. Importantly, we note that the range industry will work to do further study in this area at the appropriate time. After redesign is complete, the testing Primaira did for this and the Gas Cooktop Report, will need to be done again in order to demonstrate ignition prevention capabilities of a pan temperature control system in a gas cooktop. The existing reports do not demonstrate that capability because the testing was done on a burner design that cannot be used. CPSC staff recognized the Gas Cooktop Report's limitations in its September 2015 statement on that report. Specifically, CPSC staff stated that the

burner was modified to integrate the temperature-sensing hardware, without assessing the impact on the performance tests in the [voluntary safety standard], to which the range had been originally certified. Therefore, the effects of modifications to the burner, *e.g.*, blocking two flame ports to prevent direct impingement on the thermal housing, on the range's overall performance and efficiency were not quantified. Consequently, CPSC staff recognizes that integrating temperature-sensing hardware into existing product designs will require independent engineering development and testing by each of the manufacturers. Additionally, to achieve different levels of performance, a gas range manufacturer may feature more than one burner configuration across its product lines, and this could necessitate independent development projects for each configuration. Although staff believes that these redesign and testing efforts are achievable, more time may be needed before submitting ignition proposals for ANSI Z21.1. CPSC staff will continue to work with [AHAM] and its member companies toward the ultimate goal of developing tests and requirements to address cooking oil ignitions for gas cooktops and ranges . . .

AHAM incorporates its comments on the Primaira Gas Cooktop Report by reference here and those comments are attached as Exhibit A. We thank CPSC staff for including the above comments in its cover note to the Primaira Gas Cooktop Report in response to our comments and respectfully request that CPSC again include similar language in its statement on the Primaira Refinement Report.

The Primaira Refinement Report draws several broadly applicable conclusions from the limited testing performed for the report. And, the report concludes that "the testing results highlight boundary cases for sensor implementation." AHAM believes the report's conclusions tend to overstate the significance of this single study. For example, the report draws conclusions with

regard to low wattage elements, refined gas burner control settings, and glass limiter/pan temperature control interactions that are specific to the burners and products tested. It is possible, and likely, that other burners and elements will respond differently. Accordingly, at a maximum, the conclusions drawn in the report apply to the tested burners and elements only. While that is a step in the right direction, reliable conclusions can only be drawn from repeatable results. The report must not be used to indicate that this technology has been established as feasible for gas and glass ceramic cooktops as a whole. Significant further study, including, for gas products, complete gas burner redesign followed by further confirmation testing, will be required before such a conclusion can be drawn.

AHAM appreciates CPSC staff's indication in the staff statement on the Primaira Refinement Report that the "information will assist CPSC staff as they continue to work with standards developers, [AHAM], and other interested parties to develop proposals for requirements for reducing the likelihood of igniting food in a pan on a cooktop element." We would, however, respectfully request that CPSC staff also add a statement recognizing the limitations of the Report's scope and conclusions.

In addition, we note the following clarifications that would be helpful:

1. Figures 12 & 13—It would be helpful if the data in Figures 12 & 13 were accompanied by time-temperature curves for the low input testing to aid understanding regarding the relationship between the two.
2. The temperature bands for oil ignition in the figures throughout the report are not the same. It would be helpful, for comparison and analysis purposes, if the those bands were consistent in all of the figures in the report.

AHAM and its members are fully committed to continued study in this area with the goal of an eventual voluntary safety standard that includes a test to reduce the incidence of unattended cooking fires. We know it is critical to continually improve standards based on new innovations to reduce potential risks and further improve consumer safety. We plan to continue proactively working together with the Commission and other stakeholders toward that important public safety goal.

AHAM appreciates the opportunity to submit these comments on the Primaira Refinement Report, and would be glad to further discuss these matters should you so request.

Respectfully submitted,



Jennifer Cleary
Director, Regulatory Affairs

cc: George Borlase, Assistant Executive Director for Hazard Identification and Reduction, CPSC
Andrew Trotta, Division of Electrical Engineering, CPSC