

COMMERCIAL COOKING APPLIANCES:
MOVING TOWARDS THE FUTURE

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ABSTRACT

The Research Department of the American Gas Association Laboratories under Gas Research Institute sponsorship is actively involved in improving the efficiency of natural gas-fired commercial cooking equipment. This paper discusses the results from these efforts conducted with participating manufacturers over the past nine years.

Three high efficiency appliances were developed that have had a significant impact in the marketplace. Energy consumption was reduced by at least 40 percent by; 1) modifying a standard convection oven, 2) modifying range ovens to operate as direct-fired convection ovens, and 3) applying infrared burners to a deep fat fryer.

Currently, work is underway to apply pulse combustion to a deep fat fryer and a griddle. Also, the efficiency of an open top range has been improved by applying a power burner system. The pulse combustion deep fat fryer has demonstrated a 50 percent reduction in energy consumption over conventional immersion tube type fryers. The unit will soon be field tested and may be on the market in 1985. The griddle and open top range are in intermediate stages of development; both show promise. The griddle currently demonstrates a reduction in energy consumption of about 20 percent and the open top range about 33 percent relative to conventional designs.

The new A.G.A.L. Gas Appliance Research and Demonstration House is discussed with particular emphasis on the commercial cooking facility that is part of the structure.