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A-GRAM

A-Grams are products of HQ Air Force Civil Engineer Support Agency Tyndall AFB, Florida 32403-5319

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TARGET AUDIENCE: Base Civil Engineers, Fire Prevention, Facility Managers, Housing Managers

Range-Top Fire Prevention System for Residential-Type Kitchen Ranges

Synopsis

Air Force installations with government-owned, government-operated Military Family Housing (MFH) now have the opportunity to prevent the most common cause of MFH fires and potentially reduce operating costs. This can be done by modifying the burners on kitchen ranges with the "Safe-T-Element®." This product is unique because it prevents a fire rather than trying to suppress it. It is also approved for residential-type ranges installed in non-residential locations that would otherwise require a range-top extinguishing system.

Detail

Cooking is the leading cause of residential fires (44%)[1]. Fortunately, nearly all of these fires are small and remain confined to the kitchen area (94%). Only about 6% manage to spread beyond the kitchen and create significant financial losses. Previously, systems intended for fire suppression were the only option, but they cost more money than they saved. Now a solution is available that will prevent these fires from ever starting. This is the supplemental safety device known as the Safe-T-Element®.

The Safe-T-Element® device is bolted to the existing burner coils of the range and adds a thermocouple control circuit for each burner. These thermocouple circuits prevent the burners from reaching the auto-ignition temperatures of cooking oils (370°C/698°F) or common household cellulose materials (400°C/752°F). There is still plenty of heat available to cook the food (and even blacken it) but unattended cooking can no longer start a kitchen fire.

Installation requires approximately one hour per range by a qualified craftsman, and the installed cost is not expected to exceed $300. Payback will be approximately $50 per range per year. Thus, positive cost avoidance is expected on those ranges having a remaining service life of more than 6 years.

Installation of the Safe-T-Element® device on existing coil burner ranges is suggested as a "quality-of-life" improvement for tenants of government-owned, government-operated MFH. An additional benefit is reducing the number of responses that will be required from the installation's fire emergency services.

Also, UFC 3-600-01, Fire Protection Engineering for Facilities, (section 6-3.2, Cooking Equipment in Facilities), requires that a residential range-top extinguishing system be installed to protect residential-type ranges that are installed in non-sprinklered buildings (other than dwelling units). The Safe-T-Element® device is approved in lieu of such range top extinguishing systems, which will significantly reduce range installation costs and increase fire safety.

[1]**Fire loss statistics from Federal Emergency Management Agency (FEMA), Topical Fire Report Series, Volume 12, Issue 10, September 2011, "Residential Building Fires (2007-2009)".**