



OREGON FIRE CODE

Interpretations and Technical Advisories

collaborative service by local and state fire professionals, along with our stakeholders, and customers, to provide consistent and concise application of Oregon's fire prevention and life safety regulations.

Date: April. 1, 2014

Ruling: Technical Advisory No. 14-06 (Revised TA# 07-02 & TA# 11-07)

Subject: Protection of Existing Cooking Equipment That Create Grease-Laden Vapors (Pre November 1994).

Code Reference: 2014 Oregon Fire Code (OFC), Chapter 9 and 2014 Oregon Mechanical Specialty Code (OMSC), Chapter 5

Definition(s):

- **Pooled.** As used in this technical bulletin, is described as cooking in vats or other cooking appliances that hold a quantity of cooking medium and that cooks foods that are immersed in the cooking medium during the cooking process.
- **Cooking Medium.** Describes the type of product that is used to cook food products in deep-fat fryers and other similar cooking devices.

Content: Commercial and domestic cooking appliances used for commercial purposes that produce grease-laden vapors, such as fryers, griddles, broilers, ranges and wok ranges are required to be installed under a commercial kitchen hood in accordance with the OMSC, Section 507 and have an approved fire protection system installed in accordance with the OFC, Section 904.2.1. The fire protection system provides protection of the cooking appliances and the ventilation hood and duct system including the enclosed plenum space within the hood. Fire protection can be by means of fixed fire extinguishing systems or through the installation of water-based automatic fire sprinkler systems *that are approved for such applications.*

The purpose of the technical advisory is the result of changes in the type of cooking medium used which created additional fire protection challenges for existing fire protection systems, pre November 1994, that have been in use for several years. Changes from the use of animal-based cooking medium ("lard") to the use of vegetable or synthetic-based cooking mediums, have increased the temperatures involved with hostile fires in commercial cooking establishments or where commercial cooking equipment has been installed. Evaluations of existing fire protection systems that were not designed to handle this increased risk, were found to be inadequate and

created the potential for fires to escalate and cause significant damage to structures and placed occupants at an increased risk for injuries.

In response, in 1994 Underwriter's Laboratories developed a new standard, UL300, which is used to test fire protection systems' capabilities involving use of vegetable or synthetic-based cooking mediums, commonly described as "high temperature cooking oils." Of primary concern is the protection for deep-fat fryers and other appliances that operate with "pooled" vegetable or synthetic-based cooking mediums.

Required Compliance and Corrective Measures:

Where commercial cooking appliances and ventilation hood and duct systems are currently protected by fire protection systems, pre November 1994, and where the cooking medium involves the use of high-temperature cooking oils in pooled cooking uses such as deep fat fryers, facilities are required to take immediate action to mitigate the increased risk of fire.

NOTE: It is at the discretion of the fire code official (local fire department or State Fire Marshal) to determine what corrective measures may be required, based upon facility operational needs and an assessment of fire and life safety risks.

Any of the following corrective measures may be considered, some of which are based upon the type of fire protection system installed.

- 1) Cease use of pooled cooking uses such as deep fat fryers.
 - NOTE: Existing fire protection systems shall be required to be maintained, in accordance with manufacturer's instructions and NFPA standards.
- 2) Stop use of high-temperature cooking oils such as vegetable or synthetic based products.
 - NOTE: Existing fire protection systems shall be required to be maintained, in accordance with the manufacturer's instructions and NFPA standards.
- 3) If the current fire protection system as installed is pre November 1994, the system shall be replaced with a system that is in compliance with UL 300.
- 4) If the current fire protection is by means of an automatic fire sprinkler system installed in accordance with NFPA 13 and the sprinkler heads being used are not listed for protection of commercial cooking appliances and equipment, there are two options;
 - a) Install approved/listed sprinkler head(s).
 - b) Cease use of pooled cooking uses such as deep fat fryers if these are being used or
 - c) Install a UL 300 compliant fire protection system for those areas where pooled cooking uses such as a deep fat fryer, are in stalled.
 - NOTE: This will require either alterations to the water-based fire protection to avoid one fire protection agent from being incompatible with the other agent or shall require replacing the automatic fire sprinkler system entirely and installation of a complete fire extinguishing system.

Continued use of existing fire extinguishing pre November 1994 systems will be allowed *where there is no use of high temperature cooking oils*. This is allowed only as long as these systems are capable of being maintained and approved and/or listed replacement parts are available.

NOTE: Manufacturers have not been producing replacement parts for servicing on non-UL 300 systems since 1994.

At that point when a pre November 1994 system is no longer capable of being maintained, it is the owner's or occupant's responsibility to replace the system with a UL 300 compliant system. It is at the discretion of the fire code official to determine when these corrective measures are required.

An additional requirement involves OFC provisions for portable fire extinguishers. Non "K" rated extinguishers are incapable of providing adequate fire protection when fires involve high temperature cooking oils. Use of these cooking mediums, requires replacement of existing fire extinguishers with those listed for such protection. Approved fire extinguishers must possess a "K" rating for the protection of commercial cooking equipment. Refer to OFC, Section 904.11.5.

Other References: UL 300 and NFPA 13