



NEW REQUIREMENTS FOR COMMERCIAL KITCHEN HOOD AND DUCT EXTINGUISHING SYSTEMS

Dear Commercial Kitchen Operator:

NOTE: COMMERCIAL KITCHEN HOOD AND DUCT EXTINGUISHING SYSTEMS LABELED *UL 300* ARE IN COMPLIANCE AND THE FOLLOWING REQUIREMENTS DO NOT AFFECT YOU.

In the early 1990's, a more health conscious public, began to demand the use of vegetable oil in restaurant, fast food and other commercial kitchen operations. It was recognized that restaurant hood and duct extinguishing systems, designed to extinguish fires involving animal fat (lard), could not control fires involving the higher temperature vegetable oil. These fires could not be adequately extinguished or controlled with existing dry chemical hood and duct extinguishing systems. The dry agent dissipates and the result is a "re-ignite" or re-ignition of the fire.

In response to this development, Underwriters Laboratory (UL) established a new standard for testing systems that could successfully extinguish vegetable oil fires. In November 1994 a new standard UL 300, was published. The UL 300 wet chemical extinguishing system takes longer to dissipate its' extinguishing gases and liquids. This allows heated cooking equipment and extremely hot oils the opportunity to cool adequately and thereby preventing a re-ignite fire. The 2001 California Fire Code (CFC) required that new systems comply with the UL 300 standard, and be so labeled and listed by the State Fire Marshal. The newest edition of the California Fire Code, the 2007 version, now requires all systems (including those existing prior to 2001) be brought up to current UL 300 standards.

The requirement that all hood and duct extinguishing systems be upgraded to the UL 300 standard became effective January 1, 2008, and no later than the second required 6 month servicing of the system (June 1, 2008). *Any cooking equipment that produces grease laden vapors requires a UL 300 extinguishing system.* These appliances include deep fat fryers, griddles, ranges, char broilers and woks.

Many fire protection service companies are saying they will no longer service systems that do not comply with UL 300. Contact your current service provider now to determine your next course of action. Kitchen operators should be aware that replacement parts for non-compliant systems are becoming scarce. There may be issues regarding insurance coverage for non-conforming systems. There are also potential liability concerns for kitchen operators who do not meet the new requirements.

The new UL 300 systems have proven to be safer, more reliable and perform their primary function better than ever before.

Questions relating to system costs or technical information should be directed to your service company. For other questions contact Vernon Fire Prevention.

Bureau of Fire Prevention



**COMMERCIAL KITCHEN/COOKING SYSTEMS
 INSPECTION CHECKLIST**
 Based on 2010 CFC, NFPA, & CCR T-19

DEFINITIONS

Commercial Cooking Appliances: Appliances used in a commercial food service establishment for heating or cooking food & which produce grease vapors, steam, fumes, smoke or odors that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers, upright broilers, griddles, broilers, steam-jacket kettles, hot-top ranges, under-fired broilers (char-broilers), ovens, barbecues, rotisseries, & similar appliances. For the purpose of this definition, a food service establishment shall include any building or a portion thereof used for the preparation & serving of food.

Hood: An air-intake device used to capture by entrapment, impingement, adhesion or similar means, grease and similar contaminants before they enter a duct system.

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|---------------------------------------|--------------------------------------|--|--|
| Violation
<input type="checkbox"/> | In Place
<input type="checkbox"/> | Not Applicable
<input type="checkbox"/> | <p>Where required: A Type-I hood shall be installed at or above all commercial cooking appliances & domestic cooking appliances used for commercial cooking purposes that produce grease laden vapors. <i>(CFC 609.2)</i></p> <p>Ventilation System: Shall in connection with hoods be operated at the required rate of air movement, and classified grease filters shall be in place when the equipment under a kitchen grease hood is used. <i>(CFC 609.3.1)</i></p> <p>Grease Extractors: Where installed, they shall be operated when the commercial-type cooking equipment is used. <i>(CFC 609.3.2)</i></p> <p>Cleaning: Hoods, grease-removal devices, fans, ducts, and other appurtenances shall be cleaned at intervals as required. <i>(CFC 609.3.3)</i></p> <p>Inspection: Hoods, grease-removal devices, fans, ducts, and other appurtenances shall be inspected at intervals specified in Table 609.3.3.1 or as approved by the fire code official. <i>(CFC 609.3.3.1)</i></p> |
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Table 609.3.3.1 Commercial Cooking System Inspection Frequency
(By properly trained, qualified, and certified individuals)

<i>Type of Cooking Operations</i>	<i>Inspection Frequency</i>
Systems serving <i>solid fuel</i> operations	Monthly
Systems serving <i>high-volume</i> cooking operations (24 hr. cooking, charbroiling, or wok cooking)	Quarterly
Systems serving <i>moderate-volume</i> cooking operations	Semiannually
Systems serving <i>low-volume</i> cooking operations (Churches, day camps, seasonal businesses, senior centers)	Annually

COMMERCIAL KITCHEN/COOKING SYSTEMS

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Violation

In Place

Not Applicable

Class K portable fire extinguishers for deep fat fryers: (CFC 904.11.5.2)

1. For up to four fryers having a maximum cooking medium capacity of 80 pounds each; one Class K portable fire extinguisher is required; minimum capacity of 1.5-gallons.
2. For every additional group of four fryers having a maximum cooking medium capacity of 80 pounds each; one additional Class K portable fire extinguisher is required; minimum capacity of 1.5-gallons shall be provided.
3. For individual fryers exceeding 6 square feet in surface area; Class K extinguishers shall be installed in accordance with the extinguisher manufacturer's recommendations.

Operations and maintenance: Automatic fire extinguishing systems protecting commercial cooking systems shall be maintained in accordance with CCR T-19 & this section. (CFC 904.11.6)

Existing automatic fire extinguishing systems: Where changes in the cooking media, positioning of cooking equipment or replacement of cooking equipment occur in existing commercial cooking systems, the automatic fire extinguishing system shall be required to comply with applicable provisions of Sections 904.11 through 904.11.4. (CFC 904.11.6.1)

Extinguishing system service: Automatic fire-extinguishing systems shall be serviced at least every 6 months and after activation of the system. Certification shall be forwarded to the fire code official upon completion. (CFC 904.11.6.2)

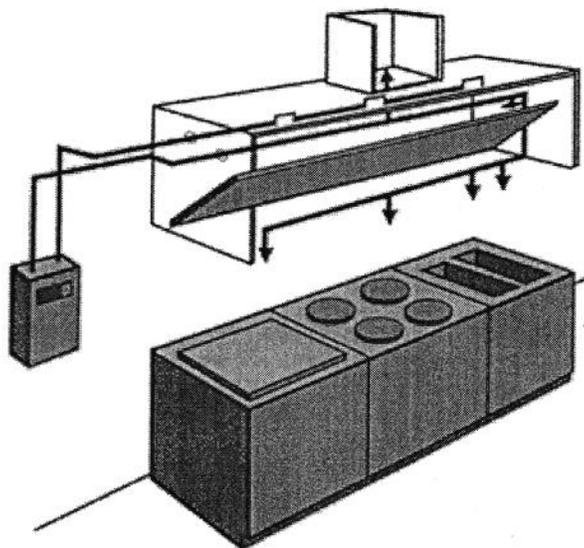
Fusible link and sprinkler head replacement: Fusible link and automatic sprinkler heads shall be replaced annually, and other protection devices shall be serviced or replaced in accordance with manufacturer's recommendations. (CFC 904.11.6.3) EXCEPTION: Frangible bulbs are not required to be replaced annually.

NFPA 96 Standard for Ventilation Control & Fire Protection of Commercial Cooking Operations; excerpts.

> Hood, grease extractors, and ducts shall have a minimum of 18" clearance to combustible materials; NFPA 96.4.2.1 Exception: hoods and ducts listed for lesser clearances, or combustible materials protected in a manner acceptable to the AHJ
> Means provided to inspect, clean, and service exhaust fan; NFPA 96.8.1.5
> Electrical wiring prohibited in ducts; NFPA 96.9.2.1
> Motors, lights and other devices prohibited in ducts and hoods; NFPA 96.9.2.2 Exception: Listed for such use or lighting units having steel enclosures on outer surface of hood and having glass covers
> Grease filters shall be listed and constructed of steel or listed equivalent material; NFPA 96.6.1.3
> Mesh filters shall not be used; NFPA 96.6.1.3
> Grease filters must be located at least 18" above cooking surface; NFPA 96.2.2.3
> Grease filters must be located at least 4' above charcoal or charbroilers; NFPA 96.2.1.2
> Grease filters must be tight fitting and easily accessible for removal and cleaning; NFPA 96.2.3.4
> Dampers not installed in exhaust duct; NFPA 96.9.1.1 Exception: when installed as part of a listed hood and duct system
> Activates an alarm or visual indicator in buildings without an alarm; NFPA 96.10.6.1.
> Deep fat fryers installed at least 18 inches away from surface flames on adjacent equipment; NFPA 96.12.1.2.4 Exception: steel or tempered glass at least 8 inches in height placed between fryers and adjacent appliances and equipment
> Exhaust system operated while cooking equipment is operated; NFPA 96.11.1.1
> Filters in place when system is used; NFPA 96.11.1.2
> Instructions on use of manual system posted; NFPA 96.11.1.4
> Cooking equipment not operated while fire system or exhaust system is inoperable; NFPA 96.11.1.6

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Vernon Fire Department – Fire Prevention Division
Commercial Kitchen Fire Suppression UL300 System Submittal



SCOPE:

This policy applies to pre-engineered fixed extinguishing systems protecting cooking surfaces in all occupancies where Vernon Fire Prevention Division has authority.

PURPOSE:

To regulate the installation of UL 300 fixed extinguishing systems in both new and existing hood and vent exhaust systems.

BACKGROUND:

The introduction of modern, better insulated cooking equipment, changes in cooking oils (animal fats to vegetable oils). These changes require a more effective fire protection system/agent to achieve extinguishment. Today's commercial cooking equipment, primarily deep fryers, in combination with vegetable oils cook at much higher temperatures making fires hotter and more difficult to control. It is the intent of the Vernon Fire Prevention Division to minimize the possibility of uncontrollable fires resulting from the incorrect application of extinguishing agents.

How Far Should a Class "K" Fire Extinguisher be located?

A Class "K" Fire Extinguisher shall be within 30 feet of travel distance of areas with heat processing equipment for food, using combustible cooking media.

PROCEDURES:

- Apply for a Permit for installation of an existing or new system.
- Submit three sets of drawings
- Pay Permit Fee

New Installations:

New installations shall conform to the UL 300 standard. Systems shall be installed in compliance with all applicable sections of the International Fire Code (IFC), NFPA 96, NFPA 17A and in accordance with the manufacturer's specifications.

Existing Commercial Kitchen Fire Suppression System Installations:

1. **Cooking lines** (deep fat fryer, tilt skillet, tilt braising pan, range): Existing non-UL 300 fixed extinguishing system installations protecting cooking lines must be upgraded to UL 300 systems. Existing systems will be allowed to remain after January 1, 2007 (the 1st inspection) and scheduled to be upgraded by the second inspection to meet the following conditions:
 2. The system coverage meets protection specifications for the cooking equipment.
 3. The hood shall remain unmodified.
 4. The cooking equipment shall not be changed or altered.
 5. Installation of a class K portable fire extinguisher in accordance with NFPA 10.
6. IF a business owner is found to be out of compliance by having no existing system, he/she has the opportunity to enter into a stipulated agreement with the Vernon Fire Prevention Office, agreeing to bring the fixed extinguishing system into compliance.
7. A written request from the business owner shall be sent to this VFD/FP Office indicating the desire for additional time to comply with the upgrade requirement. This request shall include the target date for completion.
8. A Stipulated Agreement shall be developed and signed specifying the requirements noted above, the targeted compliance date, and the actions to be taken if the agreement is violated.
9. The agreement can be mailed or hand-delivered to the client for signature. Once signed by the client, the VFD Inspector shall countersign the agreement and route it through the property folder. A signed copy shall be delivered to the client directly or by mail.

FIELD SYSTEM TESTING & ACCEPTANCE

- There are primarily two types of acceptance test to be conducted independent of each other: Manual Pull Station Test and Link interruption.
- All heat sources are to extinguish upon activation.
- The UL 300 system may have the opportunity to be interconnected to a fire alarm (excluding flow alarms) through a separate zone that supports the building / facility existing central monitoring service.