FIRE PREVENTION BUREAU

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POLICY FOR PUBLIC DISTRIBUTION
NUMBER 10-6

REQUIREMENTS FOR AUTOMATIC FIRE EXTINGUISHING SYSTEMS FOR KITCHEN HOODS AND DUCTS

This policy is meant to provide basic information for the most common conditions and situations. A permit and plan review are required for the installation of all fire extinguishing systems and components. The installation and maintenance of fire extinguishing systems shall be in accordance with Article 10 of the 1997 Edition of the Uniform Fire Code (UFC) and the most current edition of National Fire Protection Association (NFPA 96). Any questions can be addressed to the Union Colony Fire/Rescue Authority - Fire Prevention Bureau between 8:00 a.m. and 5:00 p.m. at 970/350-9510.

The following items are required for every kitchen hood fire extinguishing system installation and system extension:

1. **Permit.**
   A. If the fire extinguishing system is part of an interior remodel, tenant finish, addition, or new construction, you will need to apply for a permit through the City of Greeley Building Department prior to the plans being submitted to the Fire Prevention Bureau for review/approval. The Building Department is located at the United Plaza Building, 1100 Tenth Street, telephone number 970/350-9830.

   B. If the only work to be done is on the fire extinguishing system, then you can apply for a permit directly with the Fire Prevention Bureau.

2. **Plans and Specifications.** Three (3) copies of the complete plans and specifications for the fire extinguishing system shall be submitted to the Fire Prevention Bureau for review and approval **prior** to system installation. After review, one copy will be retained by the Fire Prevention Bureau, another copy is **required** to be kept at the job site for the installing contractor, and another copy will be returned to the contractor. Working plans shall be drawn to an indicated scale on uniform-sized sheets and shall show the following list of items that pertain to the design of the system:

   ❑ Location, including street address (available from City Engineer for new development),

2. **Plans and Specifications.** (Continued)

- ❑ Name of owner and occupant,
- ❑ Name, address, and phone number of contractor,
- ❑ Architectural floor plan of the room,
- ❑ Point of compass,
- ❑ A graphic representation of the scale used on all plans,
- ❑ Location, type, and size of all cooking surfaces,
- ❑ Where the equipment is to be installed, including all of the existing systems, shall be shown on the plans,
- ❑ Type of grease to be used in fryers (if used),
- ❑ Complete diagram, showing all devices in the system,
- ❑ Total area protected by each system,
- ❑ Full height cross section or schematic diagram,
- ❑ Location of all system nozzles, valves, and associated devices,
- ❑ Piping types and sizes,
- ❑ Make, type, and nominal orifice size of nozzles,
- ❑ Approximate capacity in gallons of each system,

3. **System Design.** Fire extinguishing systems shall be **designed, installed,** and **maintained** in accordance with the 1997 Edition of the Uniform Fire Code (UFC), and the most recent edition of the NFPA 96. All new systems shall meet the requirements of UL 300.

4. **Cut Sheets Required on Components and Equipment. Cut sheets** are required with the submittal for all components and equipment which make up the system. **Systems** and **components** shall be **listed** and approved for their intended use and for which they are installed.

5. **Acceptance Test.** Upon completion of the installation, a satisfactory test of the entire system shall be made in the presence of a qualified Fire Inspector. All functions of the system or alteration shall be tested. **48 hours advance notice required.**

6. **Monitoring.** When the location is protected by an approved fire alarm system, the alarm system shall monitor the extinguishing system and transmit an alarm condition.

7. **Ventilating Hood and Duct Systems**. A ventilating hood and duct system shall be provided in accordance with the Mechanical Code for commercial-type food heat-processing equipment that produces grease-laden vapors.

8. **Where Required**. Approved automatic fire-extinguishing systems shall be provided for the protection of cooking equipment which create grease-laden vapors.

9. **Type of System**.
   A. The system used for the protection of commercial-type cooking equipment shall be either a system listed for application with such equipment or an automatic fire-extinguishing system that is specifically designed for such application.

   B. Systems shall be installed in accordance with the Mechanical Code, their listing, and the manufacturer's instruction. Other systems shall be of an approved design and shall be of one of the following types:

      1. Automatic sprinkler system

      2. Dry-chemical extinguishing system

      3. Carbon dioxide extinguishing system

      4. Wet-chemical extinguishing system

10. **Extent of Protection**. The automatic fire-extinguishing system used to protect ventilating hoods and ducts and cooking appliances shall be installed to include cooking surfaces, deep fat fryers, griddles, upright broilers, charbroilers, range tops, and grills. Protection shall also be provided for the enclosed plenum space within the hood above filters and exhaust ducts serving the hood.

    Carbon Dioxide Systems. When carbon dioxide systems are used, there shall be a nozzle at the top of the ventilating duct. Additional nozzles that are symmetrically arranged to give uniform distribution shall be installed within vertical ducts exceeding 20 feet and horizontal ducts exceeding 50 feet. Dampers shall be installed at either the top or the bottom of the duct and shall be arranged to operate automatically upon activation of the fire-extinguishing system. When the damper is installed at the top of the duct, the top nozzle shall be immediately below the damper. Carbon dioxide automatic fire-extinguishing systems shall be sufficiently sized to protect all hazards venting through a common duct simultaneously.

11. **Automatic Power, Fuel, and Ventilation Shutoff**. Automatic fire-extinguishing systems shall be interconnected to the fuel or current supply for cooking equipment. The interconnection shall be arranged to automatically shut off all cooking equipment and electrical receptacles which are located under the hood when the system is actuated.

    A. **Shutoff Valves**. Shutoff valves or switches shall be of a type that require manual operation to reset.

11. **Automatic Power, Fuel, and Ventilation Shutoff**. (Continued)

B. **Carbon Dioxide Systems**. Commercial-type cooking equipment protected by an automatic carbon dioxide extinguishing system shall be arranged to shut off the ventilation system upon activation. All other types shall shut down the make-up air only.

12. **Special Provisions for Automatic Sprinkler Systems**. Commercial-type cooking equipment protected by automatic sprinkler systems shall be supplied from a separate, readily accessible indicating-type control valve that is identified.

Fryers. Sprinklers used for the protection of fryers shall be listed for that application and installed in accordance with their listing.

13. **Manual System Operation**. A readily accessible manual activation device installed at an approved location shall be provided for dry chemical, wet chemical, and carbon dioxide systems. The activation device is allowed to be mechanically or electrically operated. If electrical power is used, the system shall be connected to a standby power system and a visual means shall be provided to show that the extinguishing system is energized. Instructions for operating the fire-extinguishing system shall be posted adjacent to manual activation devices.

14. **Portable Fire Extinguishers**. A sodium bicarbonate or potassium bicarbonate dry-chemical-type portable fire extinguisher having a minimum rating of 40-B shall be installed within 30 feet, but no closer than eight (8) feet, of commercial food heat-processing equipment, as measured along an unobstructed path of exit travel, in accordance with UFC Standard 10-1.

15. **Operations and Maintenance.**

A. **Grease Filters.** The ventilation system in connection with hoods shall be operated at the required rate of air movement, and classified grease filters shall be in place when equipment under a kitchen grease hood is used.

B. **Grease Extractors**. If grease extractors are installed, they shall be operated when the commercial-type cooking equipment is used.

C. **Cleaning.** Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned at intervals necessary to prevent the accumulation of grease. Cleanings shall be recorded, and records shall state the extent, time, and date of cleaning. Such records shall be maintained on the premises.

D. **Servicing of Extinguishing Systems**. Extinguishing systems shall be **serviced at least every six (6) months** or after activation of the system. Inspection shall be by qualified individuals and a Certificate of Inspection shall be forwarded to the chief upon completion.

E. **Fusible Links**. Fusible links and automatic sprinkler heads shall be replaced at least annually, and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

Exception: Frangible bulbs need not be replaced annually.